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Analyses of Natural Gases, 1984

By B. J. Moore and John E. Hamak

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CONTENTS

	Page
Introduction	1
Acknowledgments	2
Geologic provinces of the United States	2
Tables	8
Previous publications in this series	102

ILLUSTRATION

1.	Geologic provinces of the United States	3

TABLES

1.	Samples from gas and oil wells in the United States	9
2.	Samples from pipelines in the United States	88

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ANALYSES OF NATURAL GASES, 1984

By B. J. Moore [1] and John E. Hamak [1]

INTRODUCTION

This Bureau of Mines publication contains analyses and related source data for 276 natural gas samples from 23 States. All samples except four were collected during calendar year 1984. Those four samples were collected earlier, but releases granting permission to publish were not received until 1984. All samples were obtained and analyzed as part of Bureau of Mines investigations of the occurrences of helium in natural gases of countries with free market economies. This survey has been conducted since 1917. The analyses published herein were made by the mass spectrometer and chromatograph.

The results of these investigations are published annually to make the information available to the petroleum industry and the general public. Twenty-eight publications have presented the results of 13,957 gas analyses made prior to 1984. The first three bulletins (1-3)[2] contain analyses and related source data on 5,218 gas samples collected from 1917 through 1960; these bulletins have been supplemented annually by information circulars (4-17, 19-24, 26-28) containing 8,453 analyses of samples collected since 1960.

In 1976, a compilation of the analyses made prior to 1975 was prepared by the Bureau of Mines and published by the National Technical Information Service of the U.S. Department of Commerce (18). This compilation contains 10,562 analyses of gas samples from gas and oil wells and natural gas pipelines in 37 States and 23 foreign countries. In 1982, a compilation of analyses made prior to 1980 was published (25). The 1982 publication contains 12,554 analyses of gas samples from gas and oil wells and natural gas pipelines in 39 States and 24 foreign countries and includes the analyses from the 1976 publication.

In addition to being in the publications, all analyses and related information published through 1984 are available on a magnetic tape file. The tape is available for $140 from the National Technical Information Service, Springfield, VA 22151; orders should refer to Bureau of Mines tape PB 84-188978.

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[1] Petroleum engineer, Section of Helium Resources Evaluation, Branch of Helium Resources, Helium Field Operations, Bureau of Mines, Amarillo, TX.

[2] Underlned numbers in parentheses refer to items in the list of previous publications at the end of the report.

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ACKNOWLEDGMENTS

The helium survey program is conducted by soliciting natural gas samples throughout the United States and other countries with free market economies. Without the assistance of the petroleum industry, State and Federal agencies, and many individuals engaged in oil and gas exploration and production, the helium survey in its present scope would not be possible. The analyses listed in the tables were made by the Section of Technical and Analytical Services, Helium Field Operations, Bureau of Mines, Amarillo, TX. The list of analyses was produced through use of a computer by the Section of Automatic Data Processing, Helium Field Operations, Bureau of Mines, Amarillo, TX.

GEOLOGIC PROVINCES OF THE UNITED STATES

The tables include geologic province codes so each sample source can be located within a specific geologic province as defined by the Committee on Statistics of Drilling of the American Association of Petroleum Geologists.[3] These provinces, which are given in the following list and shown in figure 1, are delineated by political boundaries for convenience and for accommodation of data-processing equipment. Not all of the provinces shown are gas-producing areas, so many of the codes are not used in this publication. Since State or Federal ownership is not always known in offshore areas, only one code is used for each State. Owing to the lack of information on the location of wells in Alaska, only one code, 972, is used for all wells.

The following list and figure 1 are taken from the article cited in footnote 3.

[3]Meyer, R. F. Geologic Provinces Code Map for Computer Use. AAPG Bull., v. 54, No. 7, July 1970, pp. 1301-1305.

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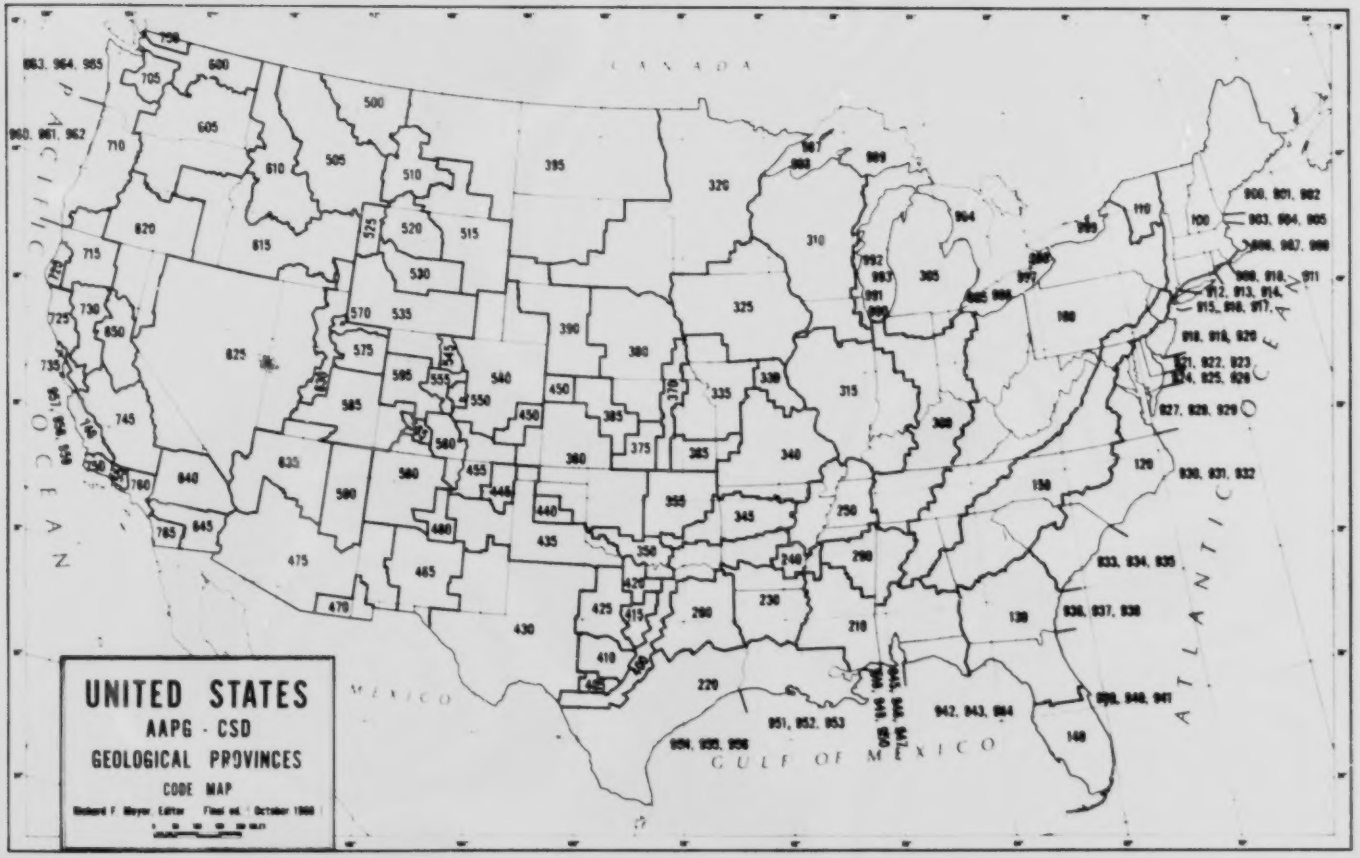

FIGURE 1. - Geologic provinces of the United States.

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3

Code	Province
100	New England Province
110	Adirondack Uplift
120	Atlantic Coast Basin
130	South Georgia-North Florida Sedimentary Province
140	South Florida Province
150	Piedmont-Blue Ridge Province
160	Appalachian Basin
200	Warrior Basin
210	Mid-Gulf Coast Basin
220	Gulf Coast Basin
230	Arkla Basin
240	Desha Basin
250	Upper Mississippi Embayment
260	East Texas Basin
300	Cincinnati Arch
305	Michigan Basin
310	Wisconsin Arch
315	Illinois Basin
320	Sioux Uplift
325	Iowa Shelf
330	Lincoln Anticline
335	Forest City Basin
340	Ozark Uplift
345	Arkoma Basin
350	South Oklahoma Folded Belt Province
355	Chautauqua Platform
360	Anadarko Basin
365	Cherokee Basin
370	Nemaha Anticline
375	Sedgwick Basin
380	Salina Basin
385	Central Kansas Uplift
390	Chadron Arch
395	Williston Basin
400	Ouachita Tectonic Belt Province
405	Kerr Basin
410	Llano Uplift
415	Strawn Basin
420	Fort Worth Syncline
425	Bend Arch
430	Permian Basin
435	Palo Duro Basin
440	Amarillo Arch
445	Sierra Grande Uplift
450	Las Animas Arch
455	Las Vegas-Raton Basin
460	Estancia Basin
465	Orogrande Basin
470	Pedregosa Basin
475	Basin-and-Range Province

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Code	Province
500	Sweetgrass Arch
505	Montana Folded Belt Province
510	Central Montana Uplift
515	Powder River Basin
520	Big Horn Basin
525	Yellowstone Province
530	Wind River Basin
535	Green River Basin
540	Denver Basin
545	North Park Basin
550	South Park Basin
555	Eagle Basin
560	San Luis Basin
565	San Juan Mountain Province
570	Uinta Uplift
575	Uinta Basin
580	San Juan Basin
585	Paradox Basin
590	Black Mesa Basin
595	Piceance Basin
600	Northern Cascade Range--Okanagan Province
605	Eastern Columbia Basin
610	Idaho Mountains Province
615	Snake River Basin
620	Southern Oregon Basin
625	Great Basin Province
630	Wasatch Uplift
635	Plateau Sedimentary Province
640	Mojave Basin
645	Salton Basin
650	Sierra Nevada Province
700	Bellingham Basin
705	Puget Sound Province
710	Western Columbia Basin
715	Klamath Mountains Province
720	Eel River Basin
725	Northern Coast Range Province
730	Sacramento Basin
735	Santa Cruz Basin
740	Coastal Basins
745	San Joaquin Basin
750	Santa Maria Basin
755	Ventura Basin
760	Los Angeles Basin
765	Capistrano Basin

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Code	Province
800	Heceta Island Area
805	Keku Islands Area
810	Gulf of Alaska Basin
815	Copper River Basin
820	Cook Inlet Basin
830	Kandik Province
835	Kobuk Province
840	Koyukuk Province
845	Bristol Bay Basin
850	Bethel Basin
855	Norton Basin
860	Selawik Basin
863	Yukon Flats Basin
865	Lower Tanana Basin
867	Middle Tanana Basin
870	Upper Tanana Basin
873	Galena Basin
875	Innoko Basin
877	Minchumina Basin
880	Holitna Basin
885	Arctic Foothills Province
890	Arctic Slope Basin
900	Maine Atlantic offshore--general
901	Maine Atlantic offshore--State
902	Maine Atlantic offshore--Federal
903	New Hampshire Atlantic offshore--general
904	New Hampshire Atlantic offshore--State
905	New Hampshire Atlantic offshore--Federal
906	Massachusetts Atlantic offshore--general
907	Massachusetts Atlantic offshore--State
908	Massachusetts Atlantic offshore--Federal
909	Rhode Island Atlantic offshore--general
910	Rhode Island Atlantic offshore--State
911	Rhode Island Atlantic offshore--Federal
912	Connecticut Atlantic offshore--general
913	Connecticut Atlantic offshore--State
914	Connecticut Atlantic offshore--Federal
915	New York Atlantic offshore--general
916	New York Atlantic offshore--State
917	New York Atlantic offshore--Federal
918	New Jersey Atlantic offshore--general
919	New Jersey Atlantic offshore--State
920	New Jersey Atlantic offshore--Federal
921	Delaware Atlantic offshore--general
922	Delaware Atlantic offshore--State
923	Delaware Atlantic offshore--Federal
924	Maryland Atlantic offshore--general
925	Maryland Atlantic offshore--State
926	Maryland Atlantic offshore--Federal
927	Virginia Atlantic offshore--general
928	Virginia Atlantic offshore--State
929	Virginia Atlantic offshore--Federal

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Code	Province
930	North Carolina Atlantic offshore--general
931	North Carolina Atlantic offshore--State
932	North Carolina Atlantic offshore--Federal
933	South Carolina Atlantic offshore--general
934	South Carolina Atlantic offshore--State
935	South Carolina Atlantic offshore--Federal
936	Georgia Atlantic offshore--general
937	Georgia Atlantic offshore--State
938	Georgia Atlantic offshore--Federal
939	Florida Atlantic offshore--general
940	Florida Atlantic offshore--State
941	Florida Atlantic offshore--Federal
942	Florida Gulf of Mexico offshore--general
943	Florida Gulf of Mexico offshore--State
944	Florida Gulf of Mexico offshore--Federal
945	Alabama Gulf of Mexico offshore--general
946	Alabama Gulf of Mexico offshore--State
947	Alabama Gulf of Mexico offshore--Federal
948	Mississippi Gulf of Mexico offshore--general
949	Mississippi Gulf of Mexico offshore--State
950	Mississippi Gulf of Mexico offshore--Federal
951	Louisiana Gulf of Mexico offshore--general
952	Louisiana Gulf of Mexico offshore--State
953	Louisiana Gulf of Mexico offshore--Federal
954	Texas Gulf of Mexico offshore--general
955	Texas Gulf of Mexico offshore--State
956	Texas Gulf of Mexico offshore--Federal
957	California Pacific offshore--general
958	California Pacific offshore--State
959	California Pacific offshore--Federal
960	Oregon Pacific offshore--general
961	Oregon Pacific offshore--State
962	Oregon Pacific offshore--Federal
963	Washington Pacific offshore--general
964	Washington Pacific offshore--State
965	Washington Pacific offshore--Federal
972	Alaska Arctic offshore--general
973	Alaska Arctic offshore--State
974	Alaska Arctic offshore--Federal
975	Alaska Bering Sea offshore--general
976	Alaska Bering Sea offshore--State
977	Alaska Bering Sea offshore--Federal
978	Alaska Pacific offshore--general
979	Alaska Pacific offshore--State
980	Alaska Pacific offshore--Federal
987	Minnesota Lake Superior offshore
988	Wisconsin Lake Superior offshore
989	Michigan Lake Superior offshore
990	Indiana Lake Michigan offshore
991	Illinois Lake Michigan offshore
992	Wisconsin Lake Michigan offshore
993	Michigan Lake Michigan offshore
994	Michigan Lake Huron offshore

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Code	Province
995	Michigan Lake Erie offshore
996	Ohio Lake Erie offshore
997	Pennsylvania Lake Erie offshore
998	New York Lake Erie offshore
999	New York Lake Ontario offhore

TABLES

The following tables include the results of analyses and related source data from gas samples, which are divided into two groups as follows:

Table 1. - Samples from gas and oil wells in the United States.

Table 2. - Samples from pipelines in the United States.

The following list indicates the sources of the samples listed in the tables:

Source	Number of samples	Tables	Source	Number of samples	Tables
Alabama.....	14	1	New York.....	10	1
Arkansas.....	13	1	North Dakota.....	5	2
California.....	28	1, 2	Ohio.....	4	1
Colorado.....	20	1	Oklahoma.....	49	1
Indiana.....	3	1	Pennsylvania.....	3	1
Kansas.....	13	1	South Dakota.....	4	1, 2
Kentucky.....	1	1	Tennessee.....	3	1
Louisiana.....	25	1	Texas.....	20	1
Michigan.....	1	1	Utah.....	8	1
Mississippi.....	5	1	West Virginia.....	1	1
Montana.....	14	1, 2	Wyoming.....	26	1, 2
New Mexico.....	6	1, 2			

All components of the analyses in the tables are reported to the nearest 0.1 pct, except helium, which is reported to the nearest 0.01 pct. The word "trace" is used to denote quantities of helium of less than 0.005 pct and quantities of other components of less than 0.05 pct.

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 1 SAMPLE 17199	INDEX 2 SAMPLE 17211	INDEX 3 SAMPLE 17396
STATE	ALABAMA	ALABAMA	ALABAMA
COUNTY	BALDWIN	FAYETTE	FAYETTE
FIELD	OYSTER BAY E	BETHEL CHURCH	BLOOMING GROVE
WELL NAME	MAX K. LAWRENZ JR.UT.8-1NO.1	MADDEN-WHITAKER 36-7 NO. 1	CONNORS NO. 18-10
LOCATION	SEC. 8, T9S, R4E	SEC. 36, T14S, R13W	SEC. 18, T15S, R13W
OWNER	TIDELANDS RESOURCES ET AL	CHARLES L. CHERRY & ASSOC.	TERRA RESOURCES, INC.
COMPLETED	11/--/83	11/07/83	12/--/82
SAMPLED	02/25/84	03/15/84	08/18/84
FORMATION	MIOC-MEYER	MISS-CARTER	MISS-CARTER
GEOLOGIC PROVINCE CODE	210	200	200
DEPTH, FEET	1321	2267	NOT GIVEN
WELLHEAD PRESSURE,PSIG	425	1200	NOT GIVEN
OPEN FLOW, MCFD	1500	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	95.4	96.8	96.7
ETHANE	TRACE	1.3	2.0
PROPANE	0.0	0.1	TRACE
N-BUTANE	0.1	TRACE	0.1
ISOBUTANE	0.0	TRACE	0.0
N-PENTANE	TRACE	TRACE	0.1
ISOPENTANE	TRACE	TRACE	TRACE
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	TRACE	TRACE	TRACE
NITROGEN	3.7	1.6	0.8
OXYGEN	0.6	0.0	0.0
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	TRACE	0.2
HELIUM	0.01	0.08	0.06
HEATING VALUE*	970	1006	1023
SPECIFIC GRAVITY	0.575	0.567	0.573

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 4 SAMPLE 17210	INDEX 5 SAMPLE 17468	INDEX 6 SAMPLE 17193
STATE	ALABAMA	ALABAMA	ALABAMA
COUNTY	FAYETTE	FAYETTE	FAYETTE
FIELD	BLUFF	MCCRACKEN MOUNTAIN	STUD HORSE CREEK
WELL NAME	ROBERTSON-REECE NO. 10-3	BRANYON NO. 1	LANNINGHAM NO. 2-15
LOCATION	SEC. 10, T14S, R13W	NOT GIVEN	SEC. 2, T14S, R12W
OWNER	CHARLES L. CHERRY & ASSOC.	BROWNING & WELCH, INC.	GRACE PETROLEUM CORP.
COMPLETED	01/26/84	09/30/84	03/--/82
SAMPLED	03/15/84	09/30/84	02/--/84
FORMATION	MISS-GILMER	MISS-LEWIS	MISS-CARTER
GEOLOGIC PROVINCE CODE	200	200	200
DEPTH, FEET	1922	3280	NOT GIVEN
WELLHEAD PRESSURE,PSIG	1050	600	NOT GIVEN
OPEN FLOW, MCFD	NOT GIVEN	30	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	93.5	90.7	97.4
ETHANE	2.2	4.9	0.8
PROPANE	0.7	1.6	TRACE
N-BUTANE	0.2	0.6	TRACE
ISOBUTANE	0.1	0.3	0.0
N-PENTANE	0.1	0.2	TRACE
ISOPENTANE	TRACE	0.1	TRACE
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.1	TRACE
NITROGEN	3.8	0.8	1.5
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.4	0.1
HELIUM	0.08	0.07	0.04
HEATING VALUE*	1024	1100	1001
SPECIFIC GRAVITY	0.593	0.625	0.564

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 7 SAMPLE 17460	INDEX 8 SAMPLE 17191	INDEX 9 SAMPLE 17510
STATE	ALABAMA	ALABAMA	ALABAMA
COUNTY	FRANKLIN	LAMAR	LAMAR
FIELD	BLUEGUT CREEK	BEAVERTON	BLOWHORN N
WELL NAME	MASSEY 33-16 NO. 21	LOGGINS NO. 4-11	SIZEMORE 3-10 NO. 1
LOCATION	SEC. 33, T8S, R15W	SEC. 4, T13S, R15W	SEC. 3, T14S, R14W
OWNER	L. W. JOHNSON & ASSOC.	GRACE PETROLEUM CORP.	GRACE PETROLEUM CORP.
COMPLETED	02/--/84	05/--/82	--/--/83
SAMPLED	10/--/84	02/--/84	10/27/84
FORMATION	MISS-EVANS	MISS-CARTER	MISS-CARTER
GEOLOGIC PROVINCE CODE	300	200	200
DEPTH, FEET	1120	NOT GIVEN	NOT GIVEN
WELLHEAD PRESSURE,PSIG	475	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD	1600	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	97.8	97.9	89.8
ETHANE	0.4	0.6	5.4
PROPANE	0.1	0.1	1.9
N-BUTANE	0.1	0.0	0.6
ISOBUTANE	TRACE	0.0	0.3
N-PENTANE	TRACE	0.0	0.2
ISOPENTANE	TRACE	0.0	0.2
CYCLOPENTANE	TRACE	0.0	TRACE
HEXANES PLUS	TRACE	0.0	0.1
NITROGEN	1.3	1.1	1.2
OXYGEN	TRACE	TRACE	TRACE
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.0	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.1
HELIUM	0.07	0.07	0.10
HEATING VALUE*	1004	1005	1108
SPECIFIC GRAVITY	0.566	0.563	0.629

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 10 SAMPLE 17192	INDEX 11 SAMPLE 17319	INDEX 12 SAMPLE 17426
STATE	ALABAMA	ALABAMA	ALABAMA
COUNTY	LAMAR	LAMAR	LAMAR
FIELD	HELL'S CREEK	LITTLE HELL'S CREEK	MILLPORT
WELL NAME	BOYETTE NO. 25-7	VERLA HARRISON NO. 16-1	COLEMAN 14-16 NO. 1
LOCATION	NOT GIVEN	SEC. 16, T15S, R14W	SEC. 14, T17S, R15W
OWNER	GRACE PETROLEUM CORP.	MICHIGAN OIL CO.	TXO PRODUCTION CORP.
COMPLETED	NOT GIVEN	08/16/82	12/08/83
SAMPLED	02/--/84	06/10/84	09/24/84
FORMATION	CRET-LEWIS	MISS-CARTER	MISS-LEWIS
GEOLOGIC PROVINCE CODE	200	200	200
DEPTH, FEET	NOT GIVEN	NOT GIVEN	4550
WELLHEAD PRESSURE,PSIG	NOT GIVEN	170	618
OPEN FLOW, MCFD	NOT GIVEN	100	1501
COMPONENT, MOLE PCT			
METHANE	97.9	82.9	89.7
ETHANE	0.6	5.4	6.9
PROPANE	TRACE	3.4	1.2
N-BUTANE	0.0	2.8	0.4
ISOBUTANE	0.0	1.5	0.2
N-PENTANE	0.0	0.6	0.1
ISOPENTANE	0.0	1.4	0.1
CYCLOPENTANE	0.0	0.4	0.1
HEXANES PLUS	0.0	0.5	0.1
NITROGEN	0.8	1.0	1.0
OXYGEN	0.1	TRACE	TRACE
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	TRACE	TRACE
HELIUM	0.06	0.06	0.08
HEATING VALUE*	1002	1296	1101
SPECIFIC GRAVITY	0.566	0.743	0.621

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 13 SAMPLE 17461	INDEX 14 SAMPLE 17256	INDEX 15 SAMPLE 17190
STATE	ALABAMA	ALABAMA	ARKANSAS
COUNTY	MARION	MOBILE	FRANKLIN
FIELD	WILDCAT	DELCHAMP PROSPECT	BOONEVILLE
WELL NAME	EMERSON 11-4 NO. 21	F.N.B.-ALTMAYER 22-16 NO. 1	BRADLEY NO. 1-28
LOCATION	SEC. 11, T9S, R15W	SEC. 22, T7S, R2W	SEC. 28, T7N, R28W
OWNER	L. W. JOHNSON & ASSOC.	TEXACO INC.	STEPHENS PRODUCTION CO.
COMPLETED	02/--/84	12/22/82	11/17/82
SAMPLED	10/--/84	04/10/84	10/17/84
FORMATION	MISS-HARTSELLE	MIOC-AMOS	PENN-CARPENTER L
GEOLOGIC PROVINCE CODE	200	210	345
DEPTH, FEET	990	1902	5283
WELLHEAD PRESSURE,PSIG	400	700	1541
OPEN FLOW, MCFD	300	1138	2900
COMPONENT, MOLE PCT			
METHANE	98.6	99.1	96.6
ETHANE	0.1	TRACE	1.1
PROPANE	TRACE	TRACE	0.1
N-BUTANE	0.0	0.0	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.0	0.0
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.0	0.0	0.0
HEXANES PLUS	0.0	0.0	0.0
NITROGEN	1.1	0.8	1.2
OXYGEN	0.0	0.0	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	TRACE	0.7
HELIUM	0.10	0.01	0.09
HEATING VALUE*	1001	1004	1001
SPECIFIC GRAVITY	0.560	0.557	0.572

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 16 SAMPLE 17065	INDEX 17 SAMPLE 17422	INDEX 18 SAMPLE 17206
STATE	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY	JOHNSON	JOHNSON	JOHNSON
FIELD	KNOXVILLE	SCRANTON	UNION CITY
WELL NAME	BILLIE WITTENAUER NO. 1	U S A NO. 1-32	OZARK REAL ESTATE NO. 2
LOCATION	SEC. 15, T8N, R22W	SEC. 32, T9N, R24W	SEC. 14, T9N, R24W
OWNER	SUN EXP. & PROD. CO.	HAWKINS OIL & GAS, INC.	ARKOMA PRODUCTION CO.
COMPLETED	02/02/83	09/--/84	12/15/83
SAMPLED	09/19/83	09/--/84	03/13/84
FORMATION	PENN-TACKETT	PENN-KELLY & HALE M	PENN-BARTON
GEOLOGIC PROVINCE CODE	345	345	345
DEPTH, FEET	3537	6726	5600
WELLHEAD PRESSURE,PSIG	366	1358	1850
OPEN FLOW, MCFD	1813	1181	10000
COMPONENT, MOLE PCT			
METHANE	92.5	96.5	97.1
ETHANE	0.9	1.2	1.2
PROPANE	0.1	0.1	0.1
N-BUTANE	0.0	0.0	TRACE
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.0	TRACE
ISOPENTANE	0.0	0.0	TRACE
CYCLOPENTANE	0.0	0.0	TRACE
HEXANES PLUS	0.0	0.0	TRACE
NITROGEN	5.6	0.3	0.5
OXYGEN	TRACE	TRACE	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.6	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	1.8	0.9
HELIUM	0.17	0.14	0.07
HEATING VALUE*	958	1002	1008
SPECIFIC GRAVITY	0.580	0.580	0.572

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 19 SAMPLE 17206	INDEX 20 SAMPLE 17154	INDEX 21 SAMPLE 17155
STATE	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY	LAFAYETTE	LOGAN	LOGAN
FIELD	WILDCAT	BOONEVILLE	BOONEVILLE
WELL NAME	MABRY NO. 1	LEFTWICH NO. 1	LEFTWICH NO. 1
LOCATION	SEC. 24, T16S, R24W	SEC. 30, T6N, R28W	SEC. 30, T6N, R28W
OWNER	GOLDSBERRY OPERATING CO. INC	EXXON CO., U.S.A.	EXXON CO., U.S.A.
COMPLETED	10/18/83	01/12/84	01/12/84
SAMPLED	03/13/84	01/12/84	01/12/84
FORMATION	JURA-SMACKOVER	PENN-BORUM U&L	PERM-ALMA
GEOLOGIC PROVINCE CODE	230	345	345
DEPTH, FEET	7942	1297	4952
WELLHEAD PRESSURE,PSIG	324	310	1100
OPEN FLOW, MCFD	1000	1442	1713
COMPONENT, MOLE PCT			
METHANE	65.4	97.0	93.7
ETHANE	6.9	0.9	1.4
PROPANE	3.6	TRACE	0.1
N-BUTANE	1.5	TRACE	TRACE
ISOBUTANE	1.5	0.0	TRACE
N-PENTANE	0.6	TRACE	TRACE
ISOPENTANE	0.7	TRACE	TRACE
CYCLOPENTANE	TRACE	TRACE	0.3
HEXANES PLUS	0.3	0.1	0.2
NITROGEN	17.1	1.6	3.9
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.1	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.2	TRACE	TRACE
HELIUM	0.08	0.06	0.09
HEATING VALUE*	1052	1004	998
SPECIFIC GRAVITY	0.794	0.566	0.587

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 22 SAMPLE 17164	INDEX 23 SAMPLE 17167	INDEX 24 SAMPLE 17476
STATE	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY	LOGAN	LOGAN	LOGAN
FIELD	CHISMVILLE	CHISMVILLE	SCRANTON
WELL NAME	LOWDER GU NO. 1	CHISMVILLE NO. 4	KERN "C" NO. 1
LOCATION	SEC. 2, T6N, R28W	SEC. 8, T6N, R27W	SEC. 34, T9N, R24W
OWNER	EXXON CO., U.S.A.	EXXON CO., U.S.A.	TXO PRODUCTION CORP.
COMPLETED	06/15/83	10/12/83	09/26/83
SAMPLED	01/25/84	01/27/84	10/10/84
FORMATION	PENN-NICHOLS	PENN-TURNER L&U	PENN-CARPENTER
GEOLOGIC PROVINCE CODE	345	345	345
DEPTH, FEET	5391	2444	2040
WELLHEAD PRESSURE,PSIG	2150	468	500
OPEN FLOW, MCFD	15353	2065	1500
COMPONENT, MOLE PCT			
METHANE	96.0	95.0	93.9
ETHANE	1.9	1.4	0.7
PROPANE	0.2	0.1	TRACE
N-BUTANE	0.0	0.0	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.0	0.0
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.0	0.0	0.0
HEXANES PLUS	0.0	0.0	0.0
NITROGEN	1.5	3.2	4.8
OXYGEN	TRACE	0.1	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	TRACE	TRACE
HELIUM	0.05	0.07	0.16
HEATING VALUE*	1012	991	964
SPECIFIC GRAVITY	0.574	0.575	0.575

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 25 SAMPLE 17153	INDEX 26 SAMPLE 17491	INDEX 27 SAMPLE 17492
STATE	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY	SEBASTIAN	SEBASTIAN	SEBASTIAN
FIELD	BOONEVILLE	GRAGG	GREENWOOD
WELL NAME	BOONEVILLE NO. 1	FRENCH NO. 1-33	PEERLESS COAL NO. 2-13
LOCATION	SEC. 23, T6N, R29W	SEC. 33, T6N, R29W	SEC. 13, T6N, R31W
OWNER	EXXON CO., U.S.A.	STEPHENS PRODUCTION CO.	STEPHENS PRODUCTION CO.
COMPLETED	01/12/84	11/05/82	11/16/82
SAMPLED	01/12/84	10/17/84	10/17/84
FORMATION	PENN-BORUM L	PENN-NICHOLS	PENN-BORUM
GEOLOGIC PROVINCE CODE	345	345	345
DEPTH, FEET	5777	3642	6029
WELLHEAD PRESSURE, PSIG	1560	1190	1543
OPEN FLOW, MCFD	3788	3450	3025
COMPONENT, MOLE PCT			
METHANE	82.2	96.6	95.1
ETHANE	1.3	1.1	1.1
PROPANE	0.1	0.1	0.1
N-BUTANE	TRACE	0.0	0.0
ISOBUTANE	TRACE	0.0	0.0
N-PENTANE	TRACE	0.0	0.0
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.1	0.0	0.0
HEXANES PLUS	0.1	0.0	0.0
NITROGEN	15.6	1.2	2.4
OXYGEN	TRACE	0.1	0.3
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.7	0.8
HELIUM	0.06	0.09	0.02
HEATING VALUE*	868	1001	986
SPECIFIC GRAVITY	0.634	0.572	0.579

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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17

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 28 SAMPLE 17300	INDEX 29 SAMPLE 17301	INDEX 30 SAMPLE 17310
STATE	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY	COLUSA	COLUSA	CONTRA COSTA
FIELD	BOUNDE CREEK	BOUNDE CREEK	LOS MEDANOS
WELL NAME	TORRES NO. 24-1	TORRES NO. 24-1	NEELY NO. 1
LOCATION	SEC. 24, T18N, R2W	SEC. 24, T18N, R2W	SEC. 8, T2N, R1W
OWNER	ARKOMA PRODUCTION CO.	ARKOMA PRODUCTION CO.	CHEVRON U.S.A., INC.
COMPLETED	12/23/83	12/23/83	10/01/83
SAMPLED	05/23/84	05/23/84	05/--/84
FORMATION	CRET-FORBES LOWER ZONE TBG.	CRET-FORBES UPPER ZONE CSG.	ECCE-DOMENGINE
GEOLOGIC PROVINCE CODE	730	730	730
DEPTH, FEET	NOT GIVEN	NOT GIVEN	3135
WELLHEAD PRESSURE, PSIG	3751	3210	800
OPEN FLOW, MCFD	NOT GIVEN	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	97.2	96.8	95.8
ETHANE	0.2	0.3	2.4
PROPANE	TRACE	TRACE	0.3
N-BUTANE	0.0	0.0	0.1
ISOBUTANE	0.0	0.0	TRACE
N-PENTANE	0.0	0.0	TRACE
ISOPENTANE	0.0	0.0	TRACE
CYCLOPENTANE	0.0	0.0	TRACE
HEXANES PLUS	0.0	0.0	TRACE
NITROGEN	2.5	2.8	1.1
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	TRACE	0.2
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	988	986	1025
SPECIFIC GRAVITY	0.565	0.567	0.577

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 31 SAMPLE 17218	INDEX 32 SAMPLE 17360	INDEX 33 SAMPLE 17166
STATE	CALIFORNIA	COLORADO	COLORADO
COUNTY	SUTTER	ARAPAHOE	BENT
FIELD	TISDALE	CHALICE	WILDCAT
WELL NAME	SEAWARD-SHANNON NO. 1-32	COLUMBINE STATE NO. 1	EARL HOFFMAN NO. 1
LOCATION	SEC. 32, T15N, R2E	SEC. 16, T4S, R64W	SEC. 31, T22S, R48W
OWNER	NATURAL GAS CORP. OF CA.	GERBER ENERGY CORP.	MURFIN DRILLING CO.
COMPLETED	02/21/84	12/05/83	12/--/82
SAMPLED	03/14/84	07/26/84	01/--/84
FORMATION	CRET-FORBES	CRET-J SAND	PENN-MORROW
GEOLOGIC PROVINCE CODE	730	540	450
DEPTH, FEET	6062	8088	4609
WELLHEAD PRESSURE,PSIG	3059	1850	NOT GIVEN
OPEN FLOW, MCFD	NOT GIVEN	500	1080
COMPONENT, MOLE PCT			
METHANE	97.9	69.9	65.8
ETHANE	0.2	13.7	7.6
PROPANE	0.0	6.9	2.5
N-BUTANE	TRACE	2.1	0.3
ISOBUTANE	0.0	1.0	0.3
N-PENTANE	0.1	0.5	0.1
ISOPENTANE	0.0	0.9	0.2
CYCLOPENTANE	TRACE	0.3	TRACE
HEXANES PLUS	TRACE	0.6	0.2
NITROGEN	1.5	1.4	22.2
OXYGEN	TRACE	TRACE	0.1
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	2.7	0.2
HELIUM	TRACE	0.03	0.36
HEATING VALUE*	1000	1339	911
SPECIFIC GRAVITY	0.563	0.818	0.729

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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19

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 34 SAMPLE 17375	INDEX 35 SAMPLE 17386	INDEX 36 SAMPLE 17484
STATE	COLORADO	COLORADO	COLORADO
COUNTY	JACKSON	KIOWA	LA PLATA
FIELD	MCCALLUM S	HASWELL	NIOBRARA
WELL NAME	CONOCO FED. 8-3 UNIT NO. 1	FRAZEE NO. 2-31	UTE INDIAN NO. 1-11
LOCATION	SEC. 8, T9N, R78W	SEC. 31, T18S, R50W	SEC. 11, T33N, R11W
OWNER	CONOCO, INC.	SAMSON OIL CO.	MOBIL OIL CORP.
COMPLETED	09/11/83	01/--/83	NOT GIVEN
SAMPLED	08/09/84	08/16/84	10/10/84
FORMATION	CRET-LAKOTA	PENN-MORROW	CRET-NIOBRARA
GEOLOGIC PROVINCE CODE	545	450	580
DEPTH, FEET	5308	5151	NOT GIVEN
WELLHEAD PRESSURE,PSIG	760	1090	400
OPEN FLOW, MCFD	8652	627	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	13.1	67.8	87.1
ETHANE	0.3	13.8	5.5
PROPANE	TRACE	7.1	2.7
N-BUTANE	0.1	1.8	0.6
ISOBUTANE	0.0	0.8	0.5
N-PENTANE	0.1	0.4	0.2
ISOPENTANE	TRACE	0.2	0.1
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	14.0	6.6	0.4
OXYGEN	TRACE	TRACE	TRACE
ARGON	0.2	TRACE	0.1
HYDROGEN	0.8	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	70.2	0.8	2.7
HELIUM	1.01	0.57	0.01
HEATING VALUE*	153	1237	1106
SPECIFIC GRAVITY	1.297	0.780	0.662

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 37 SAMPLE 17177	INDEX 38 SAMPLE 17392	INDEX 39 SAMPLE 17311
STATE	COLORADO	COLORADO	COLORADO
COUNTY	MESA	RIO BLANCO	RIO BLANCO
FIELD	COYOTE WASH	BLUE CLOUD	BLUE CLOUD-THUNDER
WELL NAME	CAMP GULCH NO. 1-24	EVACUATION CREEK NO. 32-1	KIRBY-EIDSON NO. 28-4
LOCATION	SEC. 24, T8S, R103W	SEC. 32, T4S, R102W	SEC. 28, T4S, R102W
OWNER	AMPRA OIL & GAS CO.	TENNECO OIL CO.	WALTER S. FEES, JR.
COMPLETED	09/--/83	11/06/82	08/20/82
SAMPLED	02/10/84	08/28/84	06/01/84
FORMATION	CRET-DAKOTA	CRET-MANCOS	CRET-MANCOS B
GEOLOGIC PROVINCE CODE	595	595	595
DEPTH, FEET	2900	3749	3363
WELLHEAD PRESSURE,PSIG	1040	275	350
OPEN FLOW, MCFD	500	200	800
COMPONENT, MOLE PCT			
METHANE	81.9	80.6	79.8
ETHANE	4.0	6.7	6.7
PROPANE	1.8	5.3	5.1
N-BUTANE	0.5	1.7	1.5
ISOBUTANE	0.3	0.9	0.9
N-PENTANE	0.1	0.3	0.4
ISOPENTANE	0.1	0.5	0.4
CYCLOPENTANE	TRACE	0.1	0.2
HEXANES PLUS	0.1	0.2	0.3
NITROGEN	10.5	2.9	3.7
OXYGEN	0.0	0.0	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.3	0.8
HELIUM	0.26	0.17	0.20
HEATING VALUE*	989	1210	1199
SPECIFIC GRAVITY	0.660	0.715	0.725

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 40 SAMPLE 17205	INDEX 41 SAMPLE 17317	INDEX 42 SAMPLE 17318
STATE	COLORADO	COLORADO	COLORADO
COUNTY	RIO BLANCO	RIO BLANCO	RIO BLANCO
FIELD	CATHEDRAL	DOUGLAS CREEK	DRAGON TRAIL
WELL NAME	CONTINENTAL NO. 2-21	DOUGLAS CREEK NO. 8	DRAGON TRAIL UNIT NO. 5
LOCATION	SEC. 21, T3S, R100W	SEC. 36, T2S, R102W	SEC. 20, T2S, R102W
OWNER	TWIN ARROW, INC.	CONOCO, INC.	CONOCO, INC.
COMPLETED	NOT GIVEN	NOT GIVEN	NOT GIVEN
SAMPLED	03/01/84	06/06/84	06/01/84
FORMATION	CRET-MANCOS B	CRET-MANCOS B	CRET-MANCOS B
GEOLOGIC PROVINCE CODE	595	595	595
DEPTH, FEET	4509	NOT GIVEN	NOT GIVEN
WELLHEAD PRESSURE,PSIG	450	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD	140	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	85.1	84.1	86.0
ETHANE	7.1	6.8	6.2
PROPANE	3.2	3.0	3.2
N-BUTANE	1.1	0.8	0.8
ISOBUTANE	0.5	0.6	0.6
N-PENTANE	0.2	0.2	0.2
ISOPENTANE	0.5	0.2	0.2
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.3	0.2	0.2
NITROGEN	0.6	3.2	2.2
OXYGEN	0.1	0.1	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.1	0.6	0.1
HELIUM	0.02	0.15	0.14
HEATING VALUE*	1175	1130	1144
SPECIFIC GRAVITY	0.682	0.673	0.662

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 43 SAMPLE 17303	INDEX 44 SAMPLE 17304	INDEX 45 SAMPLE 17305
STATE	COLORADO	COLORADO	COLORADO
COUNTY	RIO BLANCO	RIO BLANCO	RIO BLANCO
FIELD	EVACUATION CREEK	EVACUATION CREEK	EVACUATION CREEK
WELL NAME	GOVERNMENT NO. 13-31	GOVERNMENT NO. 4-31	GOVERNMENT C-561 NO. 2-31
LOCATION	SEC. 31, T4S, R102W	SEC. 31, T4S, R102W	SEC. 31, T4N, R102W
OWNER	TENNECO OIL CO.	TENNECO OIL CO.	TENNECO OIL CO.
COMPLETED	07/16/81	07/13/80	06/04/77
SAMPLED	05/24/84	05/24/84	05/24/84
FORMATION	CRET-MANCOS B	CRET-MANCOS B	CRET-MANCOS B
GEOLOGIC PROVINCE CODE	595	595	595
DEPTH, FEET	4844	4995	4934
WELLHEAD PRESSURE, PSIG	300	340	300
OPEN FLOW, MCFD	50	30	33
COMPONENT, MOLE PCT			
METHANE	79.7	79.1	82.3
ETHANE	5.1	5.2	5.3
PROPANE	4.1	4.0	4.1
N-BUTANE	1.4	1.3	1.3
ISOBUTANE	0.8	0.8	0.8
N-PENTANE	0.4	0.3	0.3
ISOPENTANE	0.4	0.4	0.3
CYCLOPENTANE	0.1	0.2	0.1
HEXANES PLUS	0.2	0.3	0.2
NITROGEN	7.5	7.9	4.8
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.3	0.3
HELIUM	0.23	0.23	0.20
HEATING VALUE*	1127	1122	1145
SPECIFIC GRAVITY	0.711	0.711	0.694

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 46 SAMPLE 17306	INDEX 47 SAMPLE 17290	INDEX 48 SAMPLE 17294
STATE	COLORADO	COLORADO	COLORADO
COUNTY	RIO BLANCO	RIO BLANCO	RIO BLANCO
FIELD	EVACUATION CREEK	TAIGA MOUNTAIN	TAIGA MOUNTAIN
WELL NAME	EVACUATION CREEK NO. 30-12	FED. NO. 13-15-1S-103W	FED. NO. 11-23-1N-103
LOCATION	NOT GIVEN	SEC. 15, T1S, R103W	SEC. 23, T1N, R103W
OWNER	TENNECO OIL CO.	COSEKA RESOURCES (USA), LTD.	COSEKA RESOURCES (USA), LTD.
COMPLETED	NOT GIVEN	05/06/84	05/06/84
SAMPLED	05/24/84	05/06/84	05/06/84
FORMATION	CRET-MANCOS B	CRET-DAKOTA	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	595	595	595
DEPTH, FEET	NOT GIVEN	6464	NOT GIVEN
WELLHEAD PRESSURE,PSIG	310	2000	1200
OPEN FLOW, MCFD	100	NOT GIVEN	150
COMPONENT, MOLE PCT			
METHANE	82.0	82.1	77.6
ETHANE	4.0	6.7	7.7
PROPANE	4.4	2.8	7.0
N-BUTANE	1.5	1.0	2.4
ISOBUTANE	1.1	0.7	1.6
N-PENTANE	0.4	0.4	0.6
ISOPENTANE	0.5	0.3	0.7
CYCLOPENTANE	0.1	0.1	0.2
HEXANES PLUS	0.2	0.2	0.5
NITROGEN	5.2	5.3	0.8
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.1	0.9
HELIUM	0.22	0.12	0.03
HEATING VALUE*	1157	1126	1329
SPECIFIC GRAVITY	0.705	0.683	0.777

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 49 SAMPLE 17293	INDEX 50 SAMPLE 17344	INDEX 51 SAMPLE 17364
STATE	COLORADO	COLORADO	COLORADO
COUNTY	RIO BLANCO	WELD	YUMA
FIELD	TAIGA MOUNTAIN	WILDHORSE	WHISPER
WELL NAME	FED. NO. 6-14-1N-103	DOLL NO. 1A	BRAND NO. 1-15
LOCATION	SEC. 14, T1N, R103W	SEC. 19, T7N, R58W	SEC. 15, T3N, R47W
OWNER	COSEKA RESOURCES (USA), LTD.	WEEKS ENERGY MINERALS CORP.	MIDLANDS GAS CORP.
COMPLETED	05/06/84	06/28/84	04/11/84
SAMPLED	05/06/84	06/28/84	08/01/84
FORMATION	CRET-MANCOS B	CRET-D SAND	CRET-NIOBRARA
GEOLOGIC PROVINCE CODE	595	540	540
DEPTH, FEET	NOT GIVEN	6603	2740
WELLHEAD PRESSURE,PSIG	610	371	470
OPEN FLOW, MCFD	50	356	700
COMPONENT, MOLE PCT			
METHANE	88.5	69.0	92.9
ETHANE	5.5	10.5	1.1
PROPANE	3.0	9.4	0.3
N-BUTANE	0.8	3.2	0.1
ISOBUTANE	0.4	1.2	TRACE
N-PENTANE	0.2	0.9	0.1
ISOPENTANE	0.1	0.8	0.1
CYCLOPENTANE	TRACE	0.4	TRACE
HEXANES PLUS	0.1	0.6	0.1
NITROGEN	1.0	2.3	3.4
OXYGEN	TRACE	TRACE	0.1
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	1.7	1.6
HELIUM	0.09	0.05	0.06
HEATING VALUE*	1131	1358	986
SPECIFIC GRAVITY	0.645	0.848	0.600

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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25

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 52 SAMPLE 17517	INDEX 53 SAMPLE 17168	INDEX 54 SAMPLE 17165
STATE	INDIANA	INDIANA	INDIANA
COUNTY	GIBSON	GREENE	RUSH
FIELD	WHEATONVILLE	SANBORN N	TRENTON
WELL NAME	HENRY MORGAN UNIT NO. 1	JAMES C. HARRIS NO. 1	R. STEVEN FROMAN NO. 1
LOCATION	SEC. 3, T3S, R9W	SEC. 35, T6N, R7W	SEC. 16, T14N, R9E
OWNER	ROBINSON ENGINEERING	JAMES C. & OREDITH M. HARRIS	R. STEVEN FROMAN
COMPLETED	NOT GIVEN	10/09/81	04/16/83
SAMPLED	10/--/84	02/02/84	01/25/84
FORMATION	PENN-	PENN-GAS SAND	ORDO-TRENTON
GEOLOGIC PROVINCE CODE	315	315	300
DEPTH, FEET	1062	202	875
WELLHEAD PRESSURE,PSIG	NOT GIVEN	105	120
OPEN FLOW, MCFD	400	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	50.7	82.6	78.2
ETHANE	7.6	3.2	3.7
PROPANE	1.4	0.7	0.9
N-BUTANE	0.4	0.2	0.2
ISOBUTANE	0.3	0.1	0.1
N-PENTANE	0.1	TRACE	0.1
ISOPENTANE	0.1	TRACE	0.1
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.1	TRACE	TRACE
NITROGEN	38.1	12.7	16.1
OXYGEN	TRACE	0.0	0.0
ARGON	0.1	TRACE	0.1
HYDROGEN	TRACE	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.2	0.1
HELIUM	0.71	0.25	0.37
HEATING VALUE*	727	922	900
SPECIFIC GRAVITY	0.784	0.635	0.657

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 55 SAMPLE 17371	INDEX 56 SAMPLE 17152	INDEX 57 SAMPLE 17345
STATE	KANSAS	KANSAS	KANSAS
COUNTY	CLARK	FORD	GREELEY
FIELD	SITKA S	MINNEOLA	BRADSHAW GAS AREA
WELL NAME	SMITH NO. 1-30-34-21	MCCUNE A NO. 1	FECHT 7 NO. 5
LOCATION	SEC. 30, T34S, R21W	SEC. 25, T29S, R25W	SEC. 27, T18W, R40S
OWNER	DECK OIL CO.	CHAMPLIN PETROLEUM CO.	SMITH CATTLE, INC.
COMPLETED	01/--/83	11/23/82	05/--/84
SAMPLED	08/08/84	01/10/84	06/28/84
FORMATION	PENN-MORROW	PENN-MORROW	PERM-CHASE
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	5488	5404	2920
WELLHEAD PRESSURE,PSIG	840	283	550
OPEN FLOW, MCFD	702	163	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	87.7	71.0	48.3
ETHANE	5.1	6.6	4.4
PROPANE	2.6	4.7	2.8
N-BUTANE	0.8	1.6	0.9
ISOBUTANE	0.5	0.9	0.4
N-PENTANE	0.2	0.4	0.2
ISOPENTANE	0.4	0.5	0.1
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.3	0.3	0.1
NITROGEN	1.9	13.5	40.4
OXYGEN	TRACE	TRACE	1.3
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	TRACE	TRACE
HELIUM	0.12	0.30	0.83
HEATING VALUE*	1136	1101	703
SPECIFIC GRAVITY	0.655	0.753	0.803

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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27

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 58 SAMPLE 17346	INDEX 59 SAMPLE 17347	INDEX 60 SAMPLE 17348
STATE	KANSAS	KANSAS	KANSAS
COUNTY	GREELEY	GREELEY	GREELEY
FIELD	BRADSHAW GAS AREA	BRADSHAW GAS AREA	BRADSHAW GAS AREA
WELL NAME	FECHT 7 NO. 4	HELM 1 NO. 5	HELM 1 NO. 6
LOCATION	SEC. 27, T18W, R40S	SEC. 35, T18W, R40S	SEC. 35, T18W, R40S
OWNER	SMITH CATTLE, INC.	SMITH CATTLE, INC.	SMITH CATTLE, INC.
COMPLETED	05/--/84	06/--/84	06/--/84
SAMPLED	06/28/84	06/28/84	06/28/84
FORMATION	PERM-CHASE	PERM-GLORIETA	PERM-GLORIETA
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	2920	2200	2200
WELLHEAD PRESSURE,PSIG	550	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD	NOT GIVEN	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	51.6	0.1	0.1
ETHANE	4.7	0.0	0.0
PROPANE	3.0	0.0	0.0
N-BUTANE	0.9	0.0	0.0
ISOBUTANE	0.4	0.0	0.0
N-PENTANE	0.3	0.0	0.0
ISOPENTANE	0.1	0.0	0.0
CYCLOPENTANE	TRACE	0.0	0.0
HEXANES PLUS	0.1	0.0	0.0
NITROGEN	37.7	98.9	96.8
OXYGEN	0.1	0.6	2.4
ARGON	0.1	0.1	0.2
HYDROGEN	0.0	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.2	0.4
HELIUM	0.87	0.07	0.06
HEATING VALUE*	751	1	1
SPECIFIC GRAVITY	0.790	0.968	0.972

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 61 SAMPLE 17402	INDEX 62 SAMPLE 17277	INDEX 63 SAMPLE 17278
STATE	KANSAS	KANSAS	KANSAS
COUNTY	HARPER	HASKELL	HASKELL
FIELD	STOHRVILLE	VICTORY	VICTORY
WELL NAME	BASSFORD NO. 1	LIZ SMITH NO. 2	STANLEY NO. 2
LOCATION	SEC. 21, T33S, R6W	SEC. 26, T30S, R34W	SEC. 13, T30S, R34W
OWNER	THE REACH GROUP	CONTINENTAL ENERGY	CONTINENTAL ENERGY
COMPLETED	04/24/83	07/28/83	02/01/84
SAMPLED	08/31/84	04/10/84	04/10/84
FORMATION	MISS-	MISS-	MISS-ST. LOUIS
GEOLOGIC PROVINCE CODE	375	360	360
DEPTH, FEET	4436	5381	5491
WELLHEAD PRESSURE,PSIG	1050	NOT GIVEN	1000
OPEN FLOW, MCFD	800	5300	1700
COMPONENT, MOLE PCT			
METHANE	81.1	85.7	65.8
ETHANE	7.0	4.7	6.1
PROPANE	3.3	2.4	5.2
N-BUTANE	1.2	0.8	2.2
ISOBUTANE	0.6	0.5	1.4
N-PENTANE	0.5	0.3	0.3
ISOPENTANE	0.2	0.4	1.5
CYCLOPENTANE	0.2	0.1	0.3
HEXANES PLUS	0.4	0.3	0.7
NITROGEN	5.2	4.1	11.3
OXYGEN	TRACE	0.1	TRACE
ARGON	0.0	TRACE	0.1
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	0.0
HELIUM	0.21	0.37	1.04
HEATING VALUE*	1151	1107	1197
SPECIFIC GRAVITY	0.696	0.662	0.792

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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29

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 64 SAMPLE 17197	INDEX 65 SAMPLE 17198	INDEX 56 SAMPLE 17260
STATE	KANSAS	KANSAS	KANSAS
COUNTY	MARION	PAWNEE	SEWARD
FIELD	LOST SPRINGS	ZOOK	SILVERMAN
WELL NAME	COTT NO. 2	KELLEYS NO. 3	HOFFMAN NO. R-1
LOCATION	SEC. 24, T18S, R4E	SEC. 7, T23S, R16W	SEC. 12, T32S, R34W
OWNER	R. F. WHITE	WHITE & ELLIS DRILLING, INC.	CITIES SERVICE OIL & GAS CO.
COMPLETED	08/25/83	02/27/84	10/06/83
SAMPLED	02/--/84	02/27/84	04/17/84
FORMATION	PENN-SEVERY	NOT GIVEN	PENN-MORROW
GEOLOGIC PROVINCE CODE	375	385	360
DEPTH, FEET	1200	NOT GIVEN	5362
WELLHEAD PRESSURE,PSIG	450	NOT GIVEN	1243
OPEN FLOW, MCFD	2000	NOT GIVEN	7390
COMPONENT, MOLE PCT			
METHANE	70.1	84.1	87.8
ETHANE	2.8	3.1	4.2
PROPANE	1.3	1.1	1.8
N-BUTANE	0.2	0.6	0.6
ISOBUTANE	0.2	0.5	0.3
N-PENTANE	TRACE	0.9	0.3
ISOPENTANE	TRACE	1.0	0.3
CYCLOPENTANE	TRACE	0.5	0.2
HEXANES PLUS	TRACE	1.2	0.3
NITROGEN	24.3	6.2	3.7
OXYGEN	TRACE	0.1	TRACE
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.2
HELIUM	0.93	0.72	0.25
HEATING VALUE*	807	1134	1090
SPECIFIC GRAVITY	0.686	0.697	0.645

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 67 SAMPLE 17302	INDEX 68 SAMPLE 17424	INDEX 69 SAMPLE 17233
STATE	KANSAS	KENTUCKY	LOUISIANA
COUNTY	STAFFORD	DAVIESS	BEAUREGARD
FIELD	WILDCAT	OWENSBORO W	LITTLE BARNES CREEK
WELL NAME	COPELAND NO. 1	DONALD FISHER NO. 1	OWENS ILLINOIS NO. 1
LOCATION	SEC. 29, T24S, R13W	CARTER COORDINATE 7-0-29	SEC. 36, T4S, R9
OWNER	RAINS&WILLIAMSON OIL CO. INC	JAMES S. COLLINS	FOREST OIL CORP.
COMPLETED	01/24/83	11/--/80	10/05/81
SAMPLED	05/24/84	09/22/84	03/26/84
FORMATION	MISS-CONGLOMERATE	MISS-WALTERSBURG	ECCE-COCKFIELD 9
GEOLOGIC PROVINCE CODE	385	315	220
DEPTH, FEET	3942	1170	7976
WELLHEAD PRESSURE,PSIG	NOT GIVEN	10	2367
OPEN FLOW, MCFD	4350	NOT GIVEN	2300
COMPONENT, MOLE PCT			
METHANE	72.4	4.2	83.9
ETHANE	4.5	0.1	6.6
PROPANE	2.3	TRACE	5.2
N-BUTANE	0.7	0.0	1.2
ISOBUTANE	0.4	0.0	1.3
N-PENTANE	0.2	0.0	0.3
ISOPENTANE	0.2	0.0	0.3
CYCLOPENTANE	TRACE	0.0	0.1
HEXANES PLUS	0.1	0.0	0.2
NITROGEN	17.3	89.9	0.5
OXYGEN	TRACE	0.1	TRACE
ARGON	0.1	1.1	TRACE
HYDROGEN	TRACE	4.6	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	TRACE	0.5
HELIUM	1.57	0.04	0.01
HEATING VALUE*	933	59	1227
SPECIFIC GRAVITY	0.691	0.913	0.703

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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31

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 70 SAMPLE 17487	INDEX 71 SAMPLE 17275	INDEX 72 SAMPLE 17538
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	CAMERON	CAMERON	CAMERON
FIELD	BACK RIDGE S	HIGH ISLAND	SABINE LAKE
WELL NAME	LONNIE A. DAVIS ET AL NO. 1	MIAMI "T" NO. 1	SABINE LAKE V.U.-A NO. 2
LOCATION	SEC. 25, T14S, R9W	SEC. 32, T13S, R7W	SABINE LAKE
OWNER	WILLIAMS EXPLORATION CO.	ARCO OIL & GAS CO.	STATE OF LOUISIANA
COMPLETED	12/--/83	07/07/83	NOT GIVEN
SAMPLED	NOT GIVEN	05/02/84	12/13/84
FORMATION	NOT GIVEN	OLIG-CAMERINA	MIOC-HACKBERRY
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	13360	17029	11940
WELLHEAD PRESSURE, PSIG	NOT GIVEN	12860	5250
OPEN FLOW, MCFD	NOT GIVEN	3310	8500
COMPONENT, MOLE PCT			
METHANE	85.3	92.8	85.7
ETHANE	8.1	3.3	7.2
PROPANE	2.8	0.6	3.5
N-BUTANE	0.7	0.1	0.8
ISOBUTANE	0.9	0.1	0.8
N-PENTANE	0.3	0.1	0.2
ISOPENTANE	TRACE	TRACE	0.3
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.4	0.1	0.2
NITROGEN	0.0	0.0	0.5
OXYGEN	0.0	0.0	TRACE
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.0	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.5	3.0	0.8
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1173	1031	1177
SPECIFIC GRAVITY	0.679	0.614	0.676

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 73 SAMPLE 17190	INDEX 74 SAMPLE 17313	INDEX 75 SAMPLE 17189
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	CLAIBORNE	E. BATON ROUGE	EVANGELINE
FIELD	FRAZIER CREEK	PORT HUDSON	BASILE
WELL NAME	CONTINENTAL CAN NO. 1-29	HAZEL ANDREWS NO. 1	THOMAS YOUNG NO. 1
LOCATION	SEC. 29, T19N, R6W	SEC. 61, T4S, R2W	NOT GIVEN
OWNER	ARKLA EXPLORATION CO.	AMOCO PRODUCTION CO. (USA)	STRIKER PETROLEUM CORP.
COMPLETED	06/23/83	05/02/84	01/24/83
SAMPLED	02/21/84	06/06/84	10/11/84
FORMATION	JURA-TAYLOR	CRET-TUSCALOOSA	OLIG-FRIO B
GEOLOGIC PROVINCE CODE	230	220	220
DEPTH, FEET	11456	16986	8337
WELLHEAD PRESSURE,PSIG	5950	4900	500
OPEN FLOW, MCFD	6500	NOT GIVEN	30
COMPONENT, MOLE PCT			
METHANE	96.7	67.4	87.2
ETHANE	0.9	10.5	6.7
PROPANE	0.1	6.5	2.9
N-BUTANE	0.1	1.9	0.8
ISOBUTANE	TRACE	2.0	0.7
N-PENTANE	TRACE	0.6	0.2
ISOPENTANE	TRACE	0.6	0.4
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	TRACE	0.5	0.3
NITROGEN	0.3	0.6	0.2
OXYGEN	0.1	0.2	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.6	9.1	0.3
HELIUM	0.01	TRACE	TRACE
HEATING VALUE*	1002	1252	1174
SPECIFIC GRAVITY	0.578	0.860	0.663

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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33

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 76 SAMPLE 17259	INDEX 77 SAMPLE 17322	INDEX 78 SAMPLE 17382
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	EVANGELINE	LAFOURCHE	OUACHITA
FIELD	PORT BARRY	BOURG E	CADEVILLE
WELL NAME	HIRSCH TRUST NO. 1	STATE LEASE 9637 NO. 2	E. J. WHITE NO. 1
LOCATION	SEC. 25, T5S, R2W	T17S,R19E	SEC. 36, T17N, R1E
OWNER	WOOD PETROLEUM CORP.	MCCORMICK PRODUCTION CO.	DIAMOND SHAMROCK CORP.
COMPLETED	09/--/83	06/06/83	08/16/84
SAMPLED	04/17/84	06/13/84	08/16/84
FORMATION	OLIG-FR IO	-KRUMBHAER C	JURA-COTTON VALLEY
GEOLOGIC PROVINCE CODE	220	220	230
DEPTH, FEET	8488	11917	10178
WELLHEAD PRESSURE,PSIG	500	4100	5800
OPEN FLOW, MCFD	20	ACT GIVEN	3100
COMPONENT, MOLE PCT			
METHANE	88.0	94.5	86.8
ETHANE	6.9	2.4	5.8
PROPANE	2.2	0.8	1.8
N-BUTANE	0.6	0.2	0.6
ISOBUTANE	0.6	0.3	0.4
N-PENTANE	0.2	0.1	0.3
ISOPENTANE	0.4	0.1	0.2
CYCLOPENTANE	0.2	TRACE	TRACE
HEXANES PLUS	0.4	0.1	0.3
NITROGEN	TRACE	0.3	0.7
OXYGEN	TRACE	TRACE	0.1
ARGON	0.0	TRACE	0.1
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.6	2.9
HELIUM	TRACE	TRACE	0.01
HEATING VALUE*	1166	1056	1100
SPECIFIC GRAVITY	0.657	0.594	0.666

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 79 SAMPLE 17243	INDEX 80 SAMPLE 17244	INDEX 81 SAMPLE 17245
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	PLAQUEMINES	PLAQUEMINES	PLAQUEMINES
FIELD	BAY BATISTE	BAY BATISTE	BAY BATISTE
WELL NAME	LASL 9570 NO. 1	LASL 9570 NO. 3	LASL 9570 NO. 2
LOCATION	PORT SULPHUR	PORT SULPHUR	SEC. 8, T19S, R26E
OWNER	PEND OREILLE OIL & GAS CO.	PEND OREILLE OIL & GAS CO.	PEND OREILLE OIL & GAS CO.
COMPLETED	02/--/83	02/--/83	02/--/83
SAMPLED	04/06/84	04/06/84	04/06/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	NOT GIVEN	NOT GIVEN	13770
WELLHEAD PRESSURE, PSIG	NOT GIVEN	NOT GIVEN	2525
OPEN FLOW, MCFD	NOT GIVEN	NOT GIVEN	630
COMPONENT, MOLE PCT			
METHANE	87.6	71.6	86.1
ETHANE	5.7	13.0	6.7
PROPANE	2.6	8.0	3.3
N-BUTANE	0.9	2.4	1.0
ISOBUTANE	0.7	2.1	0.8
N-PENTANE	0.3	0.6	0.3
ISOPENTANE	0.4	0.7	0.3
CYCLOPENTANE	0.1	0.2	0.1
HEXANES PLUS	0.3	0.5	0.3
NITROGEN	0.2	0.0	0.2
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.0	1.1	0.9
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1160	1406	1183
SPECIFIC GRAVITY	0.665	0.820	0.678

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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35

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 82 SAMPLE 17264	INDEX 83 SAMPLE 17266	INDEX 84 SAMPLE 17267
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	PLAQUEMINES	PLAQUEMINES	PLAQUEMINES
FIELD	BAY JIMMY	BAY JIMMY	BAY JIMMY
WELL NAME	STATE LEASE 8512 NO. 1	STATE LEASE 8512 NO. 2	LL & EB NO. 1
LOCATION	PORT SULPHUR	PORT SULPHUR	PORT SULPHUR
OWNER	PEND OREILLE OIL & GAS CO.	PEND OREILLE OIL & GAS CO.	PEND OREILLE OIL & GAS CO.
COMPLETED	02/--/83	02/--/83	02/--/83
SAMPLED	04/20/84	04/20/84	04/20/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	NOT GIVEN	NOT GIVEN	NOT GIVEN
WELLHEAD PRESSURE, PSIG	NOT GIVEN	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD	NOT GIVEN	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	50.0	83.7	84.8
ETHANE	4.6	7.0	7.1
PROPANE	2.1	4.3	3.8
N-BUTANE	0.8	1.5	1.3
ISOBUTANE	0.7	1.1	0.9
N-PENTANE	0.4	0.5	0.4
ISOPENTANE	0.2	0.4	0.3
CYCLOPENTANE	0.2	0.2	0.1
HEXANES PLUS	0.5	0.4	0.3
NITROGEN	0.1	0.1	0.1
OXYGEN	TRACE	TRACE	TRACE
ARGON	0.0	0.0	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	0.8	0.7
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1158	1239	1208
SPECIFIC GRAVITY	0.654	0.711	0.690

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 85 SAMPLE 17519	INDEX 86 SAMPLE 17378	INDEX 87 SAMPLE 17391
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	PLAQUEMINES	PLAQUEMINES	PLAQUEMINES
FIELD	COX BAY	DELTA DUCK CLUB	NOT GIVEN
WELL NAME	ORLEANS LEVEE BOARD NO. 1	DELTA DUCK CLUB UT. 1-A NO.1	STATE LEASE 7896 NO. 1
LOCATION	SEC. 28, T18S, R15E	SEC. 29, T20S, R20E	BRETON SOUND BLK.23
OWNER	CAMPBELL ENERGY	SUPERIOR OIL CO. (TEXACO)	POGO PRODUCING CO.
COMPLETED	09/--/82	08/13/84	07/30/80
SAMPLED	11/06/84	08/13/84	08/20/84
FORMATION	MIOC-1200 FT. SAND	TERT-MIOCENE U	PLEI-3500 FT. SAND
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	12000	12000	3490
WELLHEAD PRESSURE,PSIG	3150	5485	1440
OPEN FLOW, MCFD	30000	800	1508
COMPONENT, MOLE PCT			
METHANE	57.8	83.7	98.8
ETHANE	0.7	7.2	0.1
PROPANE	0.2	4.3	TRACE
N-BUTANE	0.1	1.3	0.0
ISOBUTANE	TRACE	1.0	0.0
N-PENTANE	TRACE	0.3	0.0
ISOPENTANE	TRACE	0.3	0.0
CYCLOPENTANE	TRACE	0.1	0.0
HEXANES PLUS	TRACE	0.2	0.0
NITROGEN	0.5	0.6	0.8
OXYGEN	0.1	TRACE	0.1
ARGON	TRACE	TRACE	0.1
HYDROGEN	TRACE	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	1.0	0.2
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1012	1206	1003
SPECIFIC GRAVITY	0.567	0.699	0.562

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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37

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 88 SAMPLE 17423	INDEX 89 SAMPLE 17342	INDEX 90 SAMPLE 17307
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	PLAQUEMINES	ST. MARY	TERREBONNE
FIELD	SPANISH LAKE	LAKE SAND E	GRAND BOIS
WELL NAME	10600 RASUA,DELACROIX NO.F-1	S/L 10251 NO. 1	TENNECO FEE R NO. 7
LOCATION	SEC. 21, T15S, R13E	T17S, R8E	SEC. 7, T18S, R20E
OWNER	ARCO OIL & GAS CO.	UNION TEXAS PETROLEUM CORP.	TENNECO OIL CO.
COMPLETED	04/19/83	06/08/84	05/29/84
SAMPLED	09/19/84	06/28/84	05/29/84
FORMATION	MIOC-10800 FT. SAND	MICC-ROB CHAMBERS: 3RD	MIOC-TEX-C
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	10810	17543	12168
WELLHEAD PRESSURE,PSIG	4500	13400	2789
OPEN FLOW, MCFD	NOT GIVEN	NOT GIVEN	10000
COMPONENT, MOLE PCT			
METHANE	58.5	93.4	94.1
ETHANE	0.4	2.6	2.8
PROPANE	0.1	0.7	0.8
N-BUTANE	0.1	0.2	0.2
ISOBUTANE	0.0	0.2	0.4
N-PENTANE	TRACE	0.1	0.2
ISOPENTANE	TRACE	0.1	0.1
CYCLOPENTANE	TRACE	TRACE	0.2
HEXANES PLUS	TRACE	0.1	0.4
NITROGEN	0.3	0.6	0.3
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.6	2.2	0.5
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1011	1038	1085
SPECIFIC GRAVITY	0.566	0.612	0.611

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 91 SAMPLE 17459	INDEX 92 SAMPLE 17486	INDEX 93 SAMPLE 17237
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	VERMILION	W. BATON ROUGE	WEBSTER
FIELD	GUEYDAN SW	FALSE RIVER	DYKESVILLE E
WELL NAME	HARDSCRAMBLE NO. 3	F. E. FARWELL NO. 4	HEARN "A" NO. 1
LOCATION	SEC. 22, T12S, R2W	SEC. 61, T6S, R1W	SEC. 3, T22N, R9W
OWNER	HAWTHORNE OIL & GAS CORP.	CHEVRON U.S.A., INC.	CITIES SERVICE OIL&GAS CORP.
COMPLETED	NOT GIVEN	03/31/83	07/22/83
SAMPLED	09/--/84	10/09/84	04/02/84
FORMATION	OLIG-SUB ALLIANCE 2	CRET-TUSCALOOSA	JURA-SMACKOVER C
GEOLOGIC PROVINCE CODE	220	220	230
DEPTH, FEET	12035	19957	11565
WELLHEAD PRESSURE,PSIG	7131	4325	7325
OPEN FLOW, MCFD	6000	1515	6305
COMPONENT, MOLE PCT			
METHANE	89.8	50.6	93.5
ETHANE	5.0	0.4	3.1
PROPANE	1.7	TRACE	0.7
N-BUTANE	0.4	0.1	0.2
ISOBUTANE	0.8	0.0	0.4
N-PENTANE	0.3	TRACE	0.2
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.4	TRACE	TRACE
HEXANES PLUS	0.8	0.1	0.2
NITROGEN	0.1	0.4	0.1
OXYGEN	TRACE	0.1	0.0
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	8.3	1.5
HELIUM	TRACE	TRACE	0.01
HEATING VALUE*	1159	933	1060
SPECIFIC GRAVITY	0.651	0.643	0.609

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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39

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 94 SAMPLE 17325	INDEX 95 SAMPLE 17395	INDEX 96 SAMPLE 17425
STATE	MICHIGAN	MISSISSIPPI	MISSISSIPPI
COUNTY	OSCEOLA	JASPER	LOWNDES
FIELD	HERSEY-EVART	CENTRAL HEIDELBERG	CORINNE
WELL NAME	PALDINO NO. 1-36	MASONITE NO. 1C36-6	COLUMBUS A F BASE 19-15 NO.1
LOCATION	SEC. 36, T17N, R9W	SEC. 36, T1N, R12E	SEC. 30, T16S, R18W
OWNER	PPG OIL & GAS CO.	GAV PRODUCTION CO.	TXO PRODUCTION CORP.
COMPLETED	11/16/83	08/29/84	12/01/83
SAMPLED	05/31/84	08/29/84	09/20/84
FORMATION	SILU-CLINTON	CRET-EUTAW	MISS-CARTER
GEOLOGIC PROVINCE CODE	305	210	200
DEPTH, FEET	8075	4977	6765
*WELLHEAD PRESSURE,PSIG	3622	50	610
OPEN FLOW, MCFD	2942	500	283
COMPONENT, MOLE PCT			
METHANE	56.3	50.3	80.3
ETHANE	2.6	1.0	7.6
PROPANE	0.2	1.7	3.9
N-BUTANE	0.1	1.2	1.5
ISOBUTANE	0.0	1.0	1.4
N-PENTANE	TRACE	0.9	0.9
ISOPENTANE	0.0	0.3	0.6
CYCLOPENTANE	TRACE	0.3	1.2
HEXANES PLUS	TRACE	1.0	1.8
NITROGEN	0.6	2.0	0.7
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	0.0	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.4	0.0
HELIUM	0.03	0.03	0.08
HEATING VALUE*	1031	1165	1350
SPECIFIC GRAVITY	0.674	0.676	0.773

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 97 SAMPLE 17185	INDEX 98 SAMPLE 17186	INDEX 99 SAMPLE 17316
STATE	MISSISSIPPI	MISSISSIPPI	MISSISSIPPI
COUNTY	MONROE	MONROE	SMITH
FIELD	ABERDEEN	BIBE	BOYKIN CHURCH
WELL NAME	CROSBY NO. 9-11	YOUNG NO. 35-2	USA 17-9 NO. 1
LOCATION	SEC. 9, T15S, R7E	SEC. 35, T11S, R7E	SEC. 17, T3N, R7E
OWNER	PRUET PRODUCTION CO.	PRUET PRODUCTION CO.	XMCO, INC.
COMPLETED	09/27/82	03/--/83	03/08/84
SAMPLED	02/20/84	02/20/84	06/08/84
FORMATION	MISS-CARTER	MISS-EVANS	CRET-RODESSA
GEOLOGIC PROVINCE CODE	200	200	210
DEPTH, FEET	3828	1798	10882
WELLHEAD PRESSURE,PSIG	740	120	2700
OPEN FLOW, MCFD	1100	464	500
COMPONENT, MOLE PCT			
METHANE	93.9	95.4	85.7
ETHANE	3.3	2.1	0.4
PROPANE	0.1	0.1	0.9
N-BUTANE	0.0	0.0	0.5
ISOBUTANE	0.0	0.0	0.9
N-PENTANE	0.0	0.0	0.9
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.0	0.0	0.3
HEXANES PLUS	0.0	0.0	1.4
NITROGEN	2.4	1.5	3.5
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.1	0.7	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.1	1.4
HELIUM	0.15	0.07	0.06
HEATING VALUE*	1013	1009	1108
SPECIFIC GRAVITY	0.580	0.569	0.671

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 100 SAMPLE 17390	INDEX 101 SAMPLE 17430	INDEX 102 SAMPLE 17284
STATE	MONTANA	MONTANA	MONTANA
COUNTY	FERGUS	HILL	PHILLIPS
FIELD	LEROY	FRESNO	LOVING E
WELL NAME	FED. NO. N-27-23-19-N	STATE NO. 2-36	FED. NO. 2971-2
LOCATION	SEC. 27, T23N, R19E	SEC. 36; T33N, R13E	SEC. 29, T37N, R31E
OWNER	FUEL RESOURCES DEV. CO.	WESTERN NATURAL GAS CO.	PETROLEUM CORP. OF AMERICA
COMPLETED	08/23/84	09/27/84	08/13/83
SAMPLED	08/23/84	09/27/84	05/10/84
FORMATION	CRET-EAGLE	CRET-EAGLE	CRET-BOWDOIN
GEOLOGIC PROVINCE CODE	510	500	395
DEPTH, FEET	1323	1000	1556
WELLHEAD PRESSURE, PSIG	275	305	530
OPEN FLOW, MCFD	120	200	3047
COMPONENT, MOLE PCT			
METHANE	93.1	96.6	93.1
ETHANE	0.3	0.4	0.3
PROPANE	TRACE	TRACE	TRACE
N-BUTANE	0.0	0.0	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.0	0.0
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.0	0.0	0.0
HEXANES PLUS	0.0	0.0	0.0
NITROGEN	6.2	2.8	6.2
OXYGEN	0.0	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	TRACE	0.1
HELIUM	0.08	0.08	0.07
HEATING VALUE*	948	986	948
SPECIFIC GRAVITY	0.582	0.567	0.581

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 103 SAMPLE 17285	INDEX 104 SAMPLE 17161	INDEX 135 SAMPLE 17160
STATE	MONTANA	MONTANA	NEW MEXICO
COUNTY	PHILLIPS	PONDERA	EDDY
FIELD	LOVING E	MARIAS RIVER	ANTELOPE SINK
WELL NAME	FED. NO. 2-0361	D. S. FED. NO. 21-13	NEW MEXICO STATE "DE" NO. 1
LOCATION	SEC. 3, T36N, R31E	SEC. 13, T30N, R2W	SEC. 19, T19S, R23E
OWNER	PETROLEUM CORP. OF AMERICA	DIAMOND SHAMROCK EXP. CO.	EXXON CO., U.S.A.
COMPLETED	NOT GIVEN	08/26/83	03/30/83
SAMPLED	05/10/84	01/20/84	01/26/84
FORMATION	CRET-BOWDOIN GREENHORN PHIL.	CRET-BOW ISLAND 4TH	PENN-CISCO CANYON
GEOLOGIC PROVINCE CODE	395	500	430
DEPTH, FEET	NOT GIVEN	1128	6240
WELLHEAD PRESSURE,PSIG	440	150	1630
OPEN FLOW, MCFD	1593	539	1900
COMPONENT, MOLE PCT			
METHANE	93.2	80.0	87.4
ETHANE	0.4	0.3	5.9
PROPANE	TRACE	0.0	2.4
N-BUTANE	0.0	TRACE	0.8
ISOBUTANE	0.0	0.0	0.6
N-PENTANE	0.0	0.1	0.3
ISOPENTANE	0.0	0.0	0.3
CYCLOPENTANE	0.0	TRACE	0.2
HEXANES PLUS	0.0	TRACE	0.4
NITROGEN	6.1	16.7	1.2
OXYGEN	TRACE	2.4	TRACE
ARGON	TRACE	0.2	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.2
HELIUM	0.07	0.22	0.03
HEATING VALUE*	951	820	1154
SPECIFIC GRAVITY	0.582	0.642	0.659

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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43

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 106 SAMPLE 17518	INDEX 107 SAMPLE 17297	INDEX 108 SAMPLE 17279
STATE	NEW MEXICO	NEW MEXICO	NEW YORK
COUNTY	EDDY	RIO ARRIBA	CATTARAUGUS
FIELD	UNDESIGNATED	DEVILS FORK	RANDOLPH
WELL NAME	EASTERN SHORE "TL" FED. NO.1	CANYON LARGO UNIT NO. 325	MEADE NO. 1
LOCATION	SEC. 8, T19S, R27E	SEC. 33, T25N, R6W	SEC.C IVORY QUAD,RANDOLPH Td
OWNER	YATES PETROLEUM CORP.	MARRION & BAYLESS	PAUL & MARJORIE MEADE
COMPLETED	05/13/83	02/22/84	06/01/82
SAMPLED	11/08/84	05/22/84	05/08/84
FORMATION	PENN-MORROW	CRET-GALLUP	SILU-MEDINA
GEOLOGIC PROVINCE CODE	430	580	160
DEPTH, FEET	7708	4679	4570
WELLHEAD PRESSURE,PSIG	2410	1075	1250
OPEN FLOW, MCFD	3694	744	1237
COMPONENT, MOLE PCT			
METHANE	68.4	74.7	93.9
ETHANE	7.5	11.4	2.2
PROPANE	3.9	6.8	0.2
N-BUTANE	1.1	2.3	0.1
ISOBUTANE	0.5	0.5	0.0
N-PENTANE	0.2	0.7	0.1
ISOPENTANE	0.5	0.6	TRACE
CYCLOPENTANE	0.1	0.2	0.1
HEXANES PLUS	0.2	0.2	0.1
NITROGEN	14.4	1.7	3.1
OXYGEN	2.7	0.1	TRACE
ARGON	0.1	TRACE	TRACE
HYDROGEN	TRACE	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.5	TRACE
HELIUM	0.23	0.06	0.10
HEATING VALUE*	1026	1319	1012
SPECIFIC GRAVITY	0.751	0.774	0.587

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 109 SAMPLE 17280	INDEX 110 SAMPLE 17481	INDEX 111 SAMPLE 17964
STATE	NEW YORK	NEW YORK	NEW YORK
COUNTY	CATTARAUGUS	CHAUTAUQUA	CHAUTAUQUA
FIELD	RANDOLPH	CHERRY CREEK	ELLINGTON
WELL NAME	SENN NO. 2	LANGLESS NO. 1	WEHRENBERG NO. 1
LOCATION	SEC.C,RANDOLPH QUAD,RANDOLPH	SEC. D CHERRY CRK. QD.&TWP.	SEC.E,KENNEDY QUAD,ELLINGTON
OWNER	DALE S. & WILDA SENN	SEIS-EX. GEOPHYSICAL, LTD.	TRAHAN PETROLEUM, INC.
COMPLETED	06/03/82	02/25/82	10/26/82
SAMPLED	05/08/84	10/10/84	10/01/84
FORMATION	SILU-MEDINA	SILU-MEDINA	SILU-MEDINA
GEOLOGIC PROVINCE CODE	160	160	160
DEPTH, FEET	4210	3850	4118
WELLHEAD PRESSURE,PSIG	1200	1075	1230
OPEN FLOW, MCFD	2768	2320	1250
COMPONENT, MOLE PCT			
METHANE	93.8	92.3	92.7
ETHANE	2.2	2.4	2.7
PROPANE	0.2	0.2	0.2
N-BUTANE	0.1	0.1	0.1
ISOBUTANE	0.0	TRACE	0.0
N-PENTANE	TRACE	0.0	0.1
ISOPENTANE	TRACE	0.1	TRACE
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	3.4	4.6	3.8
OXYGEN	0.1	TRACE	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.1	0.1
HELIUM	0.11	0.14	0.11
HEATING VALUE*	1003	996	1005
SPECIFIC GRAVITY	0.585	0.594	0.592

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 112 SAMPLE 17498	INDEX 113 SAMPLE 17497	INDEX 114 SAMPLE 17979
STATE	NEW YORK	NEW YORK	NEW YORK
COUNTY	CHAUTAUQUA	CHAUTAUQUA	CHAUTAUQUA
FIELD	FRENCH CREEK-MEDINA	KIANTONE-MEDINA	LAKE SHORE
WELL NAME	C. VOLK NO. 1	T. NORDLAND NO. 1A	HOWARD GILBERT NO. 1
LOCATION	FRENCH CREEK TOWNSHIP	KIANTONE TOWNSHIP	SEC.6-HAMLET QD CHAROTTE TP
OWNER	ENVIROGAS, INC.	ENVIROGAS, INC.	GREAT WESTERN DEV. CO.
COMPLETED	06/23/82	01/15/82	--/--/83
SAMPLED	10/15/84	10/15/84	10/04/84
FORMATION	SILU-MEDINA	SILU-MEDINA	SILU-MEDINA
GEOLOGIC PROVINCE CODE	160	160	160
DEPTH, FEET	4080	4200	147
WELLHEAD PRESSURE,PSIG	1235	1210	880
OPEN FLOW, MCFD	900	2000	1813
COMPONENT, MOLE PCT			
METHANE	88.2	93.7	91.7
ETHANE	4.5	2.4	3.0
PROPANE	1.0	0.2	0.4
N-BUTANE	0.3	0.1	0.1
ISOBUTANE	0.2	0.0	0.1
N-PENTANE	0.1	TRACE	TRACE
ISOPENTANE	0.1	TRACE	TRACE
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	TRACE	0.1
NITROGEN	4.9	3.2	4.4
OXYGEN	TRACE	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.2	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.1
HELIUM	0.20	0.09	0.14
HEATING VALUE*	1031	1001	1005
SPECIFIC GRAVITY	0.619	0.583	0.602

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 115 SAMPLE 17496	INDEX 116 SAMPLE 17362	INDEX 117 SAMPLE 17184
STATE	NEW YORK	NEW YORK	NEW YORK
COUNTY	CHAUTAUQUA	LIVINGSTON	WYOMING
FIELD	POLAND-MEDINA	UHLEY CORNERS	WILDCAT
WELL NAME	J. HILL NO. 1	ROGERS NO. 1 LRC NO. 93	GEORGE UNIT NO. 1-A
LOCATION	POLAND TOWNSHIP	SEC. H, LEROY QUAD, YORK TWP	WETHERSFIELD TWP.
OWNER	ENVIROGAS, INC.	LENAPE RESOURCES CORP.	LENAPE RESOURCES CORP.
COMPLETED	07/07/82	06/18/82	10/18/79
SAMPLED	10/15/84	07/24/84	02/20/84
FORMATION	SILU-MEDINA	SILU-MEDINA	SILU-MEDINA
GEOLOGIC PROVINCE CODE	160	160	160
DEPTH, FEET	3910	1509	3256
WELLHEAD PRESSURE, PSIG	1345	200	700
OPEN FLOW, MCFD	5000	1043	331
COMPONENT, MOLE PCT			
METHANE	92.9	85.4	91.2
ETHANE	2.2	7.0	2.3
PROPANE	0.2	1.6	0.2
N-BUTANE	0.1	0.3	0.1
ISOBUTANE	0.0	0.2	0.0
N-PENTANE	TRACE	0.1	0.0
ISOPENTANE	TRACE	TRACE	TRACE
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	TRACE
NITROGEN	4.1	4.8	5.9
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	TRACE
HELIUM	0.12	0.24	0.21
HEATING VALUE*	955	1058	974
SPECIFIC GRAVITY	0.588	0.637	0.592

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 118 SAMPLE 17419	INDEX 119 SAMPLE 17467	INDEX 120 SAMPLE 17274
STATE	NORTH DAKOTA	NORTH DAKOTA	NORTH DAKOTA
COUNTY	BILLINGS	MCKENZIE	MCKENZIE
FIELD	ROOSEVELT	ELK	JUNIPER
WELL NAME	CENEX FED. NO. 34-4	IVERSON NO. A-1	EIDE 35-11 NO. 1
LOCATION	SEC. 4, T142N, R102W	SEC. 6, T151N, R102W	SEC. 35, T149N, R99W
OWNER	DIAMOND SHAMROCK EXP. CO.	SUN EXP. & PROD. CO.	PLACID OIL CO.
COMPLETED	--/--/81	08/--/83	05/01/84
SAMPLED	09/16/84	09/19/84	05/01/84
FORMATION	DEVO-DUPEROW	MISS-MISSION CANYON	ORDO-RED RIVER
GEOLOGIC PROVINCE CODE	395	395	395
DEPTH, FEET	10790	9364	14280
WELLHEAD PRESSURE, PSIG	1415	820	4500
OPEN FLOW, MCFD	130	300	4500
COMPONENT, MOLE PCT			
METHANE	56.5	63.6	74.1
ETHANE	17.6	16.4	5.4
PROPANE	12.0	9.9	1.6
N-BUTANE	5.3	3.5	0.4
ISOBUTANE	2.9	1.6	0.6
N-PENTANE	1.6	0.7	0.2
ISOPENTANE	1.7	1.0	0.1
CYCLOPENTANE	0.4	0.2	0.1
HEXANES PLUS	0.9	0.4	0.3
NITROGEN	0.6	1.6	2.6
OXYGEN	TRACE	TRACE	0.5
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	12.8
CARBON DIOXIDE	0.5	1.1	1.2
HELIUM	0.01	0.02	0.02
HEATING VALUE*	1678	1468	1037
SPECIFIC GRAVITY	0.987	0.876	0.733

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

48

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 121 SAMPLE 17270	INDEX 122 SAMPLE 17493	INDEX 123 SAMPLE 17494
STATE	OHIO	OHIO	OHIO
COUNTY	GEAUGA	KNOX	KNOX
FIELD	MONTSVILLE	MOUNT VERNON N	MOUNT VERNON N
WELL NAME	CLEMSON NO. 1	BESST-CAMERON UNIT	RUBY & ARTHUR BURKE NO. 1
LOCATION	HAMDEN QUAD.	LOT. 24, QTR. 4, T-7, R-14	LOT 2, QTR 4, T-7, R-2
OWNER	COLLINS-MCGREGOR OPER. CO.	JADOIL, INC.	JADOIL, INC.
COMPLETED	11/18/82	09/30/80	10/20/83
SAMPLED	04/27/84	10/09/84	10/09/84
FORMATION	SILU-CLINTON	CAMB-TREMPEALEAU	SILU-CLINTON
GEOLOGIC PROVINCE CODE	160	160	160
DEPTH, FEET	3792	4096	2100
WELLHEAD PRESSURE,PSIG	870	1400	700
OPEN FLOW, MCFD	2800	150	6000
COMPONENT, MOLE PCT			
METHANE	81.9	80.3	79.3
ETHANE	7.3	6.6	6.8
PROPANE	3.5	3.6	2.5
N-BUTANE	1.2	1.1	0.8
ISOBUTANE	0.8	0.5	0.6
N-PENTANE	0.3	0.3	0.2
ISOPENTANE	0.2	0.3	0.3
CYCLOPENTANE	0.2	0.1	TRACE
HEXANES PLUS	0.6	0.3	0.2
NITROGEN	3.8	6.5	8.8
OXYGEN	TRACE	TRACE	TRACE
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.0	0.2	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.0	TRACE	0.1
HELIUM	0.12	0.19	0.27
HEATING VALUE*	1187	1124	1069
SPECIFIC GRAVITY	0.704	0.693	0.685

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 124 SAMPLE 17257	INDEX 125 SAMPLE 17374	INDEX 126 SAMPLE 17281
STATE	OHIO	OKLAHOMA	OKLAHOMA
COUNTY	TUSCARAWAS	BEAVER	CADDO
FIELD	BALTIC	DOMBEY NW	CRAIN
WELL NAME	DAN ANDREAS NO. 1	DANIEL STRICKLAND NO. 1	CRAIN NO. 1
LOCATION	SEC. 18, AUBURN TWP.	SEC. 32, T5N, R20ECM	SEC. 2, T10N, R12W
OWNER	CLARENCE SHERMAN	KELLOIL, INC.	RICKS EXPLORATION CORP.
COMPLETED	09/07/81	11/--/82	06/25/82
SAMPLED	04/16/84	08/10/84	05/01/84
FORMATION	ORDO-ROSE RUN	MISS-CHESTER	PENN-RED FORK
GEOLOGIC PROVINCE CODE	160	360	360
DEPTH, FEET	6790	7000	13100
WELLHEAD PRESSURE,PSIG	2200	925	NOT GIVEN
OPEN FLOW, MCFD	25	605	975
COMPONENT, MOLE PCT			
METHANE	89.6	87.0	85.2
ETHANE	5.0	5.0	6.6
PROPANE	1.7	2.3	1.9
N-BUTANE	0.6	1.0	0.3
ISOBUTANE	0.4	0.5	0.2
N-PENTANE	0.2	0.4	0.1
ISOPENTANE	0.2	0.2	0.1
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.2	0.2	0.1
NITROGEN	1.9	2.8	0.4
OXYGEN	TRACE	0.1	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.3	0.9
HELIUM	0.06	0.06	0.03
HEATING VALUE*	1106	1117	1105
SPECIFIC GRAVITY	0.633	0.656	0.632

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 127 SAMPLE 17183	INDEX 128 SAMPLE 17236	INDEX 129 SAMPLE 17189
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CADDO	CADDO	CADDO
FIELD	CYRIL W	EAKLY N	LIBBIE SW
WELL NAME	LG BOONE NO. 1	PELVIN CHISUM NO. 1	FROST NO. 1-17
LOCATION	SEC. 31, T6N, R10W	SEC. 29, T11N, R13W	SEC. 17, T11N, R13W
OWNER	PCX CORP.	SUN EXP. & PROD. CO.	LEAR PETROLEUM EXP., INC.
COMPLETED	03/--/83	03/10/84	08/--/81
SAMPLED	02/14/84	03/11/84	02/23/84
FORMATION	MISS-GODDARD	PENN-ATOKA	PENN-SPRINGER
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	19808	14302	15000
WELLHEAD PRESSURE,PSIG	5200	NOT GIVEN	3200
OPEN FLOW, MCFD	1200	20323	10064
COMPONENT, MOLE PCT			
METHANE	96.8	93.2	96.7
ETHANE	1.0	2.5	1.0
PROPANE	0.1	0.4	0.1
N-BUTANE	TRACE	0.1	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	TRACE	0.1	0.0
ISOPENTANE	0.0	TRACE	0.0
CYCLOPENTANE	TRACE	TRACE	0.0
HEXANES PLUS	TRACE	TRACE	0.0
NITROGEN	0.2	2.2	0.5
OXYGEN	TRACE	0.5	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.7	0.9	1.6
HELIUM	0.02	0.02	0.02
HEATING VALUE*	1001	1007	1000
SPECIFIC GRAVITY	0.577	0.594	0.579

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 130 SAMPLE 17380	INDEX 131 SAMPLE 17195	INDEX 132 SAMPLE 17314
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CADDO	CADDO	CADDO
FIELD	LOOKEBA E	SICKLES	SICKLES NE
WELL NAME	BAKER NO. 1	PECK NO. 1-10	BENNIE LINDLEY "A" NO. 30-2
LOCATION	SEC. 6, T10N, R10W	SEC. 10, T10N, R12W	SEC. 30, T11N, R11W
OWNER	ANR PRODUCTION CO.	LEAR PETROLEUM EXP., INC.	GETTY OIL CO.
COMPLETED	07/16/77	09/--/82	11/17/83
SAMPLED	08/15/84	02/23/84	06/06/84
FORMATION	PENN-SPRINGER	PENN-ATOKA	PENN-SPRINGER
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	13426	14276	13895
WELLHEAD PRESSURE,PSIG	5106	6400	7500
OPEN FLOW, MCFD	1800	3583	4226
COMPONENT, MOLE PCT			
METHANE	95.5	93.5	92.4
ETHANE	2.2	3.3	4.1
PROPANE	0.4	0.6	0.9
N-BUTANE	0.1	0.1	0.3
ISOBUTANE	0.0	0.1	0.2
N-PENTANE	TRACE	TRACE	0.1
ISOPENTANE	TRACE	TRACE	0.1
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	0.1	0.1	0.2
NITROGEN	0.5	1.3	0.6
OXYGEN	0.1	0.0	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.2	1.0	1.0
HELIUM	0.02	0.02	0.02
HEATING VALUE*	1026	1034	1072
SPECIFIC GRAVITY	0.588	0.602	0.615

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 133 SAMPLE 17248	INDEX 134 SAMPLE 17242	INDEX 135 SAMPLE 17321
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CLEVELAND	COAL	COMANCHE
FIELD	PECAN	TUPELO E	FLETCHER
WELL NAME	JOHNSON "B" NO. 1-25	PALMER ROYALTY NO. 1	TEN BEARS NO. 1
LOCATION	SEC. 25, T10N, R1E	SEC. 6, T1N, R9E	SEC. 5, T4N, R9W
OWNER	ANADARKO PRODUCTION CO.	KEITH F. WALKER OIL PROD.	KERR-MCGEE CORP.
COMPLETED	08/26/83	10/08/83	07/--/84
SAMPLED	04/12/84	04/05/84	11/09/84
FORMATION	ORDO-SIMPSON	PERM-CROMWELL	MISS-SPIERS
GEOLOGIC PROVINCE CODE	355	345	350
DEPTH, FEET	5936	5117	18910
WELLHEAD PRESSURE,PSIG	1500	1646	8850
OPEN FLOW, MCFD	500	773	3500
COMPONENT, MOLE PCT			
METHANE	37.5	80.4	95.3
ETHANE	26.1	9.2	1.4
PROPANE	22.5	4.7	0.2
N-BUTANE	7.2	1.3	0.0
ISOBUTANE	2.3	0.6	0.0
N-PENTANE	1.5	0.3	0.0
ISOPENTANE	0.9	0.5	0.0
CYCLOPENTANE	0.3	0.3	0.0
HEXANES PLUS	0.6	0.5	0.0
NITROGEN	1.0	1.9	1.6
OXYGEN	TRACE	0.1	0.3
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.2	1.2
HELIUM	0.01	0.10	0.02
HEATING VALUE*	1857	1236	996
SPECIFIC GRAVITY	1.127	0.720	0.583

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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53

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 136 SAMPLE 17320	INDEX 137 SAMPLE 17388	INDEX 138 SAMPLE 17254
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CREEK	CREEK	CUSTER
FIELD	MANNFORD	MANNFORD	ALEDO SW
WELL NAME	P. B. JACKSON NO. 1	FLORES NO. 2	SMITH "HH" NO. 1
LOCATION	SEC. 7, T18N, R9E	SEC. 29, T18N, R9E	SEC. 30, T15N, R19W
OWNER	TEXACO INC.	LITTLE RIVER ENERGY CO.	TEXAS OIL & GAS CORP.
COMPLETED	11/03/83	01/05/84	06/12/81
SAMPLED	04/25/84	08/22/84	04/17/84
FORMATION	PENN-BURGESS	PENN-SKINNER L	PENN-SKINNER
GEOLOGIC PROVINCE CODE	355	355	360
DEPTH, FEET	2898	2337	11124
WELLHEAD PRESSURE,PSIG	781	775	6175
OPEN FLOW, MCFD	1752	1300	3300
COMPONENT, MOLE PCT			
METHANE	70.7	68.1	79.9
ETHANE	9.4	7.4	9.7
PROPANE	4.9	5.3	5.0
N-BUTANE	1.2	1.3	1.4
ISOBUTANE	0.4	0.6	0.9
N-PENTANE	0.3	0.3	0.2
ISOPENTANE	0.2	0.2	0.7
CYCLOPENTANE	0.1	0.1	0.5
HEXANES PLUS	0.2	0.2	0.6
NITROGEN	12.3	16.0	0.4
OXYGEN	TRACE	TRACE	0.1
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	0.6
HELIUM	0.07	0.27	0.03
HEATING VALUE*	1101	1059	1278
SPECIFIC GRAVITY	0.741	0.756	0.737

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 139 SAMPLE 17271	INDEX 140 SAMPLE 17349	INDEX 141 SAMPLE 17376
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CUSTER	CUSTER	CUSTER
FIELD	ALEDO SW	ARAPAHOE	CARPENTER E
WELL NAME	REINSCHMIEDT NO. 1	STRONG NO. 1	EL PASO YOUNG STATE NO. 1
LOCATION	SEC. 30, T15N, R19W	SEC. 18, T17W, R13N	SEC. 31, T13N, R19W
OWNER	TXO PRODUCTION CORP.	HARPER OIL CO.	EL PASO EXPLORATION CO.
COMPLETED	11/08/83	03/26/84	08/13/84
SAMPLED	04/29/84	07/06/84	08/10/84
FORMATION	PENN-SKINNER	PENN-ATOKA	PENN-RED FORK
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	11174	13387	12976
WELLHEAD PRESSURE,PSIG	3440	9300	3630
OPEN FLOW, MCFD	4400	3700	1386
COMPONENT, MOLE PCT			
METHANE	76.7	50.7	80.6
ETHANE	8.7	4.8	8.8
PROPANE	4.2	1.5	4.7
N-BUTANE	1.1	0.3	1.4
ISOBUTANE	0.7	0.5	1.2
N-PENTANE	0.3	0.2	0.4
ISOPENTANE	0.2	0.0	0.8
CYCLOPENTANE	0.2	0.1	0.2
HEXANES PLUS	0.3	0.5	0.5
NITROGEN	5.6	0.3	0.3
OXYGEN	1.3	TRACE	TRACE
ARGON	0.1	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.7	1.0	0.9
HELIUM	0.02	0.02	0.02
HEATING VALUE*	1147	1109	1268
SPECIFIC GRAVITY	0.726	0.634	0.732

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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55

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 142 SAMPLE 17253	INDEX 143 SAMPLE 17182	INDEX 144 SAMPLE 17358
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CUSTER	CUSTER	DEWEY
FIELD	CARPENTER NE	WEATHERFORD	PUTNAM
WELL NAME	FOSS NO. 1	CORNELL NO. 1-24	E. S. COLLIER UNIT NO. 2
LOCATION	SEC. 18, T12N, R19W	SEC. 24, T13N, R15W	SEC. 15, T17N, R18W
OWNER	TEXAS OIL & GAS CORP.	ARKLA EXPLORATION CO.	ARCO OIL & GAS CO.
COMPLETED	06/26/82	07/26/83	04/19/84
SAMPLED	04/17/84	02/14/84	07/24/84
FORMATION	PENN-DES MOINES	PENN-ATOKA	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	13458	13007	10678
WELLHEAD PRESSURE, PSIG	4924	3850	3750
OPEN FLOW, MCFD	2100	6500	4000
COMPONENT, MOLE PCT			
METHANE	93.0	84.3	85.1
ETHANE	4.0	7.9	8.0
PROPANE	0.7	3.5	3.1
N-BUTANE	0.1	0.9	0.7
ISOBUTANE	0.1	0.8	0.5
N-PENTANE	TRACE	0.3	0.2
ISOPENTANE	0.1	0.5	0.2
CYCLOPENTANE	0.1	0.3	0.1
HEXANES PLUS	0.1	0.5	0.3
NITROGEN	0.7	0.5	0.6
OXYGEN	0.1	0.1	0.0
ARGON	TRACE	0.0	0.0
HYDROGEN	0.0	TRACE	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.0	0.4	1.1
HELIUM	0.03	0.02	0.03
HEATING VALUE*	1057	1215	1162
SPECIFIC GRAVITY	0.604	0.694	0.673

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 145 SAMPLE 17359	INDEX 146 SAMPLE 17482	INDEX 147 SAMPLE 17308
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	DEWEY	GARVIN	GRADY
FIELD	PUTNAM	NEW HOPE SE	AMBER E
WELL NAME	E. S. COLLIER UNIT NO. 2	VAUGHN RANCHES A NO. 1	WEAVER NO. 2
LOCATION	SEC. 15, T17N, R18W	SEC. 10, T3N, R3W	SEC. 11, T8N, R6W
OWNER	ARCO OIL & GAS CO.	PHILLIPS OIL CO.	SULLIVAN & CO.
COMPLETED	04/19/84	04/26/84	11/02/83
SAMPLED	07/24/84	10/09/84	05/24/84
FORMATION	PENN-RED FORK	DEVO-HUNTON	PENN-BOYD
GEOLOGIC PROVINCE CODE	360	350	360
DEPTH, FEET	9563	8378	6949
WELLHEAD PRESSURE,PSIG	3465	2350	2300
OPEN FLOW, MCFD	3000	750	250
COMPONENT, MOLE PCT			
METHANE	78.6	75.8	78.3
ETHANE	11.7	13.8	4.4
PROPANE	5.6	5.6	1.5
N-BUTANE	1.2	2.0	0.4
ISOBUTANE	0.7	TRACE	0.3
N-PENTANE	0.3	0.1	0.2
ISOPENTANE	0.3	0.5	0.1
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	0.2	0.1	0.2
NITROGEN	0.6	1.6	13.9
OXYGEN	0.0	TRACE	0.5
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.7	0.5	0.1
HELIUM	0.04	0.05	0.09
HEATING VALUE*	1251	1259	961
SPECIFIC GRAVITY	0.722	0.735	0.676

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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57

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 148 SAMPLE 17357	INDEX 149 SAMPLE 17287	INDEX 150 SAMPLE 17375
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	GRADY	GRADY	HARPER
FIELD	CHICKASHA NW	HARNES-DEEP	MOCANE-LAVERNE
WELL NAME	LILLY B. NO. 1	AGAWAM NO. 28-A	HIERONYMUS UNIT "D" NO. 2
LOCATION	SEC. 2, T6N, R8W	SEC. 28, T5N, R7W	SEC. 2, T26N, R24W
OWNER	J. WALTER DUNCAN	RICKS EXPLORATION CO.	AMOCO PRODUCTION CO.
COMPLETED	03/21/84	09/14/82	NOT GIVEN
SAMPLED	06/28/84	05/15/84	10/12/84
FORMATION	PENN-YULE	PENN-CUNNINGHAM L	PENN-TONKAWA
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	8248	NOT GIVEN	5349
WELLHEAD PRESSURE, PSIG	2000	3000	175
OPEN FLOW, MCFD	1145	2300	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	54.6	50.9	80.0
ETHANE	2.7	5.5	8.3
PROPANE	0.6	1.6	4.5
N-BUTANE	0.1	0.2	1.5
ISOBUTANE	0.1	0.1	0.6
N-PENTANE	0.1	0.0	0.5
ISOPENTANE	TRACE	0.3	0.2
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.1	0.1	0.4
NITROGEN	1.5	0.5	3.4
OXYGEN	0.0	0.1	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.6	0.3
HELIUM	0.09	0.04	0.15
HEATING VALUE*	1042	1053	1201
SPECIFIC GRAVITY	0.592	0.621	0.715

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 151 SAMPLE 17176	INDEX 152 SAMPLE 17471	INDEX 153 SAMPLE 17187
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	HASKELL	LINCOLN	LINCOLN
FIELD	KINTA	SPORN	TRYON
WELL NAME	ROSE NO. 2-24	HERT TRUST NO. 1-22	SPORN ESTATE NO. 23-1
LOCATION	SEC. 24, T7N, R19E	SEC. 22, T17N, R3E	SEC. 23, T16N, R3E
OWNER	SAMSON RESOURCES CO.	NONDORF OIL & GAS, INC.	CHAMPLIN EXPLORATION, INC.
COMPLETED	11/02/81	04/22/84	03/05/82
SAMPLED	02/14/84	10/02/84	02/--/84
FORMATION	PENN-WAPANUCKA	PENN-RED FORK	NOT GIVEN
GEOLOGIC PROVINCE CODE	345	355	355
DEPTH, FEET	9635	3958	NOT GIVEN
WELLHEAD PRESSURE,PSIG	780	1325	NOT GIVEN
OPEN FLOW, MCFD	3100	1000	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	94.1	76.8	76.0
ETHANE	0.6	7.7	7.6
PROPANE	0.1	3.8	3.6
N-BUTANE	TRACE	1.2	1.2
ISOBUTANE	TRACE	0.5	0.5
N-PENTANE	0.0	0.3	0.4
ISOPENTANE	0.2	0.1	0.3
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.1	0.2	0.2
NITROGEN	0.3	8.9	9.8
OXYGEN	TRACE	TRACE	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	4.3	0.2	0.1
HELIUM	0.04	0.10	0.15
HEATING VALUE*	984	1103	1101
SPECIFIC GRAVITY	0.609	0.709	0.716

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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59

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 154 SAMPLE 17501	INDEX 155 SAMPLE 17288	INDEX 156 SAMPLE 17175
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	LOGAN	NOBLE	OKLAHOMA
FIELD	GUTHRIE LAKE	FOURDEE E	BRITTON S
WELL NAME	SHANNON NO. 1-36	MOE JEROME NO. 2	WOOD NO. 1-3
LOCATION	SEC. 36, T16N, R3W	SEC. 26, T22N, R1W	SEC. 3, T12N, R3W
OWNER	PSEC, INC.	WIL-MC OIL CORP.	PITCO CO.
COMPLETED	04/26/84	05/15/84	11/19/82
SAMPLED	10/12/84	05/15/84	02/15/84
FORMATION	PENN-SKINNER	MISS-CHAT	PENN-BASAL UNCONF. SAND
GEOLOGIC PROVINCE CODE	355	355	355
DEPTH, FEET	5517	3176	6900
WELLHEAD PRESSURE,PSIG	1000	100	2150
OPEN FLOW, MCFD	2300	250	475
COMPONENT, MOLE PCT			
METHANE	68.4	78.0	82.3
ETHANE	11.0	5.7	6.8
PROPANE	7.8	3.8	2.9
N-BUTANE	2.5	1.0	1.0
ISOBUTANE	0.8	0.5	0.4
N-PENTANE	0.5	0.3	0.4
ISOPENTANE	0.6	0.2	0.2
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.3
NITROGEN	5.3	10.0	4.4
OXYGEN	TRACE	TRACE	0.9
ARGON	2.2	TRACE	TRACE
HYDROGEN	0.2	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.1	0.2
HELIUM	0.08	0.20	0.04
HEATING VALUE*	1265	1077	1123
SPECIFIC GRAVITY	0.805	0.702	0.684

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 157 SAMPLE 17465	INDEX 158 SAMPLE 17213	INDEX 159 SAMPLE 17214
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	OKLAHOMA	OKLAHOMA	OKLAHOMA
FIELD	PEAVINE	WHEATLAND	WHEATLAND
WELL NAME	JULIUS NO. 3-A	PEERY NO. 20-1	PURCELL NO. 29-1
LOCATION	SEC. 4, T14N, R2W	SEC. 20, T11N, R4W	SEC. 29, T11N, R4W
OWNER	HARPER OIL CO.	RATLIFF EXPLORATION CO.	RATLIFF EXPLORATION CO.
COMPLETED	07/09/84	08/18/83	11/11/83
SAMPLED	10/03/84	03/20/84	03/20/84
FORMATION	PENN-BARTLESVILLE&CHECKERBOA	ORDO-VIOLA	ORDO-WILCOX
GEOLOGIC PROVINCE CODE	355	355	355
DEPTH, FEET	5010	8414	8666
WELLHEAD PRESSURE,PSIG	1700	2324	2042
OPEN FLOW, MCFD	920	1320	2100
COMPONENT, MOLE PCT			
METHANE	80.6	88.1	83.1
ETHANE	10.0	5.7	6.4
PROPANE	4.4	2.4	3.3
N-BUTANE	1.5	0.9	1.2
ISOBUTANE	0.6	0.4	0.6
N-PENTANE	0.5	0.4	0.5
ISOPENTANE	0.3	0.2	0.3
CYCLOPENTANE	0.1	0.2	0.2
HEXANES PLUS	0.3	0.4	0.4
NITROGEN	1.3	1.0	3.5
OXYGEN	0.1	TRACE	0.1
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.3	0.2
HELIUM	0.04	0.03	0.05
HEATING VALUE*	1234	1154	1165
SPECIFIC GRAVITY	0.712	0.659	0.693

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 160 SAMPLE 17215	INDEX 161 SAMPLE 17282	INDEX 162 SAMPLE 17289
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	OKLAHOMA	OKLAHOMA	OKMULGEE
FIELD	WHEATLAND	WILL ROGERS W	HASKELL
WELL NAME	HARDY NO. 21-1	HOOD NO. 31-1	ELIZABETH NO. 2
LOCATION	SEC. 21, T11N, R4W	SEC. 31, T11N, R4W	SEC. 23, T16N, R14E
OWNER	RATLIFF EXPLORATION CO.	RATLIFF EXPLORATION CO.	U.T.C. ENERGY RESOURCES, INC
COMPLETED	09/19/83	08/04/83	03/17/83
SAMPLED	03/20/84	05/07/84	05/10/84
FORMATION	PENN-BARTLESVILLE	PENN-SKINNER	PENN-DUTCHER
GEOLOGIC PROVINCE CODE	355	355	355
DEPTH, FEET	7602	8034	1815
WELLHEAD PRESSURE,PSIG	2492	2367	520
OPEN FLOW, MCFD	1800	11576	3500
COMPONENT, MOLE PCT			
METHANE	80.3	89.1	70.4
ETHANE	9.1	5.4	12.5
PROPANE	4.6	2.2	7.0
N-BUTANE	1.6	0.6	1.9
ISOBUTANE	0.7	0.3	0.9
N-PENTANE	0.6	0.2	0.4
ISOPENTANE	0.4	0.2	0.3
CYCLOPENTANE	0.4	0.2	0.3
HEXANES PLUS	0.7	0.3	0.4
NITROGEN	1.1	1.1	5.5
OXYGEN	0.1	TRACE	0.1
ARGON	0.0	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.4	0.2
HELIUM	0.03	0.05	0.10
HEATING VALUE*	1267	1127	1275
SPECIFIC GRAVITY	0.733	0.644	0.783

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 163 SAMPLE 17209	INDEX 164 SAMPLE 17194	INDEX 165 SAMPLE 17230
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	OKMULGEE	OKMULGEE	OSAGE
FIELD	HOFFMAN	OKMULGEE NE	LABADIE LEASE
WELL NAME	GREEN NO. 1	DILCO NO. 1-27	LABADIE NO. 1
LOCATION	SEC. 20, T12N, R14E	SEC. 27, T14N, R13E	SEC. 31, T27N, R11E
OWNER	BAILEY PETROLEUM CORP.	DILCO	T.P.E.X. EXPLORATION, INC.
COMPLETED	08/15/83	09/08/83	01/09/81
SAMPLED	03/--/84	02/23/84	03/29/84
FORMATION	PENN-CROMWELL	PENN-WAPANUCKA	MISS-CHAT
GEOLOGIC PROVINCE CODE	355	355	355
DEPTH, FEET	2162	1999	1866
WELLHEAD PRESSURE,PSIG	167	600	200
OPEN FLOW, MCFD	572	1626	100
COMPONENT, MOLE PCT			
METHANE	83.7	87.8	86.5
ETHANE	8.9	5.9	0.7
PROPANE	3.3	2.0	TRACE
N-BUTANE	0.9	0.6	TRACE
ISOBUTANE	0.4	0.3	TRACE
N-PENTANE	0.3	0.2	TRACE
ISOPENTANE	0.1	0.2	0.1
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.1
NITROGEN	1.8	2.5	7.0
OXYGEN	TRACE	TRACE	1.1
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.0	TRACE	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.1	4.0
HELIUM	0.09	0.09	0.09
HEATING VALUE*	1168	1108	902
SPECIFIC GRAVITY	0.676	0.643	0.637

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 166 SAMPLE 17231	INDEX 167 SAMPLE 17268	INDEX 168 SAMPLE 17399
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	OSAGE	PAYNE	PITTSBURG
FIELD	MISSION CREEK LEASE	BROYLES	KIOWA SW
WELL NAME	MISSION CREEK NO. 1	CIRCLE "T" RANCH NO. 2	KINNIKIN NO. 1
LOCATION	SEC. 26, T28N, R11E	SEC. 26, T18N, R4E	SEC. 26, T3N, R14E
OWNER	T.P.E.X. EXPLORATION, INC.	EL DORADO DRILLING, INC.	SAMSON RESOURCES CO.
COMPLETED	11/18/83	08/06/83	12/13/83
SAMPLED	03/29/84	04/20/84	09/01/84
FORMATION	MISS-CHAT	PENN-BARTLESVILLE	PENN-WAPANUCKA
GEOLOGIC PROVINCE CODE	355	355	345
DEPTH, FEET	1880	3682	4941
WELLHEAD PRESSURE,PSIG	600	180	1950
OPEN FLOW, MCFD	600	623	19265
COMPONENT, MOLE PCT			
METHANE	91.5	77.2	94.0
ETHANE	1.3	10.3	3.8
PROPANE	0.1	4.8	0.9
N-BUTANE	0.2	1.5	0.2
ISOBUTANE	0.1	0.6	0.1
N-PENTANE	0.1	0.5	0.1
ISOPENTANE	0.1	0.1	TRACE
CYCLOPENTANE	TRACE	0.2	TRACE
HEXANES PLUS	0.1	0.4	0.1
NITROGEN	4.6	4.3	0.3
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.6	0.1	0.5
HELIUM	0.13	0.07	0.05
HEATING VALUE*	977	1216	1063
SPECIFIC GRAVITY	0.606	0.729	0.597

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 169 SAMPLE 17477	INDEX 170 SAMPLE 17157	INDEX 171 SAMPLE 17261
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	ROGER MILLS	ROGER MILLS	ROGER MILLS
FIELD	NOT GIVEN	RED FORK	ROLL SE
WELL NAME	PARR NO. 1-36	MARGARET DEAN ET AL NO. 1-31	LOVETT "A" NO. 1
LOCATION	SEC. 36, T13N, R26W	SEC. 31, T15N, R21W	SEC. 12, T15N, R23W
OWNER	PIONEER PRODUCTION CORP.	DIAMOND SHAMROCK EXP. CO.	TEXAS OIL & GAS CORP.
COMPLETED	--/--/82	03/19/83	06/18/82
SAMPLED	10/11/84	01/24/84	04/18/84
FORMATION	PENN-MORROW U	PENN-CLEVELAND	PENN-RED FORK
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	16340	10873	11982
WELLHEAD PRESSURE,PSIG	3922	5864	3264
OPEN FLOW, MCFD	9000	2000	1375
COMPONENT, MOLE PCT			
METHANE	96.6	83.1	87.7
ETHANE	0.5	9.4	7.4
PROPANE	0.1	3.8	2.3
N-BUTANE	0.0	0.8	0.4
ISOBUTANE	0.0	0.6	0.4
N-PENTANE	0.0	0.1	0.1
ISOPENTANE	0.0	0.4	0.2
CYCLOPENTANE	0.0	0.1	0.1
HEXANES PLUS	0.0	0.2	0.2
NITROGEN	1.3	0.3	0.2
OXYGEN	0.3	TRACE	TRACE
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.2	0.5	1.0
HELIUM	0.02	0.03	0.02
HEATING VALUE*	990	1191	1134
SPECIFIC GRAVITY	0.577	0.685	0.649

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 172 SAMPLE 17247	INDEX 173 SAMPLE 17379	INDEX 174 SAMPLE 17173
STATE	OKLAHOMA	OKLAHOMA	PENNSYLVANIA
COUNTY	WASHINGTON	WASHITA	CENTRE
FIELD	OCHELATA N	SENTINEL	COUNCIL RUN
WELL NAME	ANTHIS NO. 8	KING NO. 9-1	COMM. OF PA. NO.1 TRACT 231
LOCATION	SEC. 25, T25N, R12E	SEC. 9, T8N, R19W	BOGGS TWP.
OWNER	DEVER EXPLORATION, INC.	CONOCO, INC.	EASTERN STATES EXP. CO.
COMPLETED	07/--/83	12/28/83	07/26/82
SAMPLED	04/10/84	08/08/84	02/08/84
FORMATION	PENN-OSWEGO	PENN-SPRINGER	DEVO-ELK SAND
GEOLOGIC PROVINCE CODE	355	360	160
DEPTH, FEET	905	12516	4650
WELLHEAD PRESSURE, PSIG	NOT GIVEN	5700	1740
OPEN FLOW, MCFD	283	4000	1958
COMPONENT, MOLE PCT			
METHANE	51.4	55.9	95.1
ETHANE	1.1	2.4	2.5
PROPANE	0.7	0.3	0.3
N-BUTANE	0.3	0.1	0.1
ISOBUTANE	0.3	0.0	TRACE
N-PENTANE	0.2	TRACE	0.1
ISOPENTANE	TRACE	0.1	0.0
CYCLOPENTANE	0.4	TRACE	0.1
HEXANES PLUS	0.4	TRACE	0.2
NITROGEN	3.0	0.3	1.2
OXYGEN	0.1	0.1	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.0	0.7	TRACE
HELIUM	0.04	0.03	0.15
HEATING VALUE*	1028	1030	1038
SPECIFIC GRAVITY	0.629	0.581	0.584

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 175 SAMPLE 17469	INDEX 176 SAMPLE 17506	INDEX 177 SAMPLE 17291
STATE	PENNSYLVANIA	PENNSYLVANIA	SOUTH DAKOTA
COUNTY	ERIE	ERIE	HARDING
FIELD	DRUMLIN	ERIE	CADY CREEK
WELL NAME	RUTKOWSKI NO. 2	CLIFFORD TROYER NO. 1	HARRISON-BECK NO. 2-9
LOCATION	SEC.E,CAMBRIDGE SPRNGS,NE QD	SEC.G,HAMMETT QD,GREENE TWP	SEC. 9, T15N, R3E
OWNER	VINEYARD OIL & GAS CO.	NRM PETROLEUM CORP.	SAM G. HARRISON
COMPLETED	07/17/84	03/12/83	06/--/83
SAMPLED	10/01/84	10/26/84	05/15/84
FORMATION	DEVO-ORISKANY & SILU-SALINA	SILU-MEDINA	CRET-SHANNON
GEOLOGIC PROVINCE CODE	160	160	395
DEPTH, FEET	2990	3473	1121
WELLHEAD PRESSURE,PSIG	800	1075	185
OPEN FLOW, MCFD	3000	2316	84
COMPONENT, MOLE PCT			
METHANE	78.7	90.5	92.5
ETHANE	12.6	3.2	0.2
PROPANE	4.3	0.4	TRACE
N-BUTANE	1.1	0.2	0.0
ISOBUTANE	0.4	0.0	0.0
N-PENTANE	0.3	0.1	0.0
ISOPENTANE	0.1	0.0	0.0
CYCLOPENTANE	0.1	TRACE	0.0
HEXANES PLUS	0.2	0.2	0.0
NITROGEN	2.0	5.1	7.1
OXYGEN	TRACE	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.1	0.1
HELIUM	0.20	0.14	0.02
HEATING VALUE*	1216	1006	941
SPECIFIC GRAVITY	0.705	0.605	0.585

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 178 SAMPLE 17298	INDEX 179 SAMPLE 17299	INDEX 180 SAMPLE 17250
STATE	SOUTH DAKOTA	SOUTH DAKOTA	TENNESSEE
COUNTY	HARDING	HARDING	FENTRESS
FIELD	SHORT PINE HILLS W	SHORT PINE HILLS W	WILDCAT
WELL NAME	FED. NO. 1-29	STATE NO. 2-5	PLATEAU PROPERTIES NO. 3
LOCATION	SEC. 29, T16N, R2E	SEC. 5, T16N, R2E	SEC. 22, T3S, R5E
OWNER	SAM G. HARRISON	JERRY MCCUTCHIN, JR.	CATOOSA EXPLORATION CORP.
COMPLETED	10/15/82	08/17/81	03/--/82
SAMPLED	05/21/84	05/--/84	04/11/84
FORMATION	CRET-SHANNON	CRET-SHANNON	MISS-FT. PAYNE
GEOLOGIC PROVINCE CODE	395	395	160
DEPTH, FEET	1246	1725	1297
WELLHEAD PRESSURE,PSIG	220	225	10
OPEN FLOW, MCFD	400	500	2
COMPONENT, MOLE PCT			
METHANE	93.3	92.7	82.2
ETHANE	0.2	0.2	7.1
PROPANE	TRACE	TRACE	2.3
N-BUTANE	0.0	0.0	0.7
ISOBUTANE	0.0	0.0	0.3
N-PENTANE	0.0	0.0	0.2
ISOPENTANE	0.0	0.0	0.1
CYCLOPENTANE	0.0	0.0	0.1
HEXANES PLUS	0.0	0.0	0.1
NITROGEN	6.3	6.9	5.3
OXYGEN	TRACE	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	1.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	TRACE
HELIUM	0.02	0.02	0.34
HEATING VALUE*	949	943	1079
SPECIFIC GRAVITY	0.582	0.584	0.652

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 181 SAMPLE 17466	INDEX 182 SAMPLE 17485	INDEX 133 SAMPLE 17262
STATE	TENNESSEE	TENNESSEE	TEXAS
COUNTY	MORGAN	PICKETT	COLEMAN
FIELD	PLEASANT RIDGE	WILDCAT	REEVES
WELL NAME	BROWN-PEMBERTON NO. 1	W. CROUCH NO. 1	ERNEST REEVES NO. 1
LOCATION	SEC. 12, T3S, R58E	SEC. 11, A-53E	SEC. 31,BLK2,T&NO SUR.,A-652
OWNER	B-J. INC.	MILLER CONTRACT DRLG., INC.	HRUBETZ OIL CO.
COMPLETED	10/05/81	--/--/80	05/17/83
SAMPLED	10/01/84	10/05/84	04/18/84
FORMATION	MISS-MONTEAGLE	ORDO-STONES RIVER	ORDO-ELLENBURGER
GEOLOGIC PROVINCE CODE	160	300	425
DEPTH, FEET	1220	1000	4553
WELLHEAD PRESSURE,PSIG	285	100	300
OPEN FLOW, MCFD	442	200	58
COMPONENT, MOLE PCT			
METHANE	73.8	79.5	68.8
ETHANE	13.2	11.3	10.6
PROPANE	5.2	3.4	5.1
N-BUTANE	1.9	0.8	1.5
ISOBUTANE	0.6	0.3	0.6
N-PENTANE	0.6	0.2	0.3
ISOPENTANE	0.5	0.2	0.2
CYCLOPENTANE	0.2	TRACE	0.1
HEXANES PLUS	0.3	0.1	0.2
NITROGEN	2.9	3.7	11.5
OXYGEN	TRACE	0.2	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.6	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.1	0.5
HELIUM	0.18	0.14	0.39
HEATING VALUE*	1275	1156	1125
SPECIFIC GRAVITY	0.750	0.688	0.757

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 184 SAMPLE 17292	INDEX 185 SAMPLE 17238	INDEX 186 SAMPLE 17169
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HEMPHILL	HEMPHILL	KENEDY
FIELD	HEMPHILL (GRANITE WASH)	SHRIEKY S	POTRERO FARIAS
WELL NAME	LOCKE NO.2-60	MATHERS NO. 1-14	MRS. S. K. EAST EST. NO. B-4
LOCATION	SEC. 60, BLK.A2, H&GN SUR.	SEC. 14, H&GN SURVEY, A2	LAS MOTAS DE LA BARRETA A-77
OWNER	WAGNER & BROWN	TOM F. MARSH, INC.	S. K. EAST ESTATE
COMPLETED	11/15/83	10/31/83	02/03/84
SAMPLED	05/15/84	04/06/84	02/03/84
FORMATION	PERM-GRANITE WASH	PENN-MORROW	MIOC-G-94 SAND
GEOLOGIC PROVINCE CODE	360	360	220
DEPTH, FEET	10198	11820	6950
WELLHEAD PRESSURE,PSIG	2528	NOT GIVEN	2640
OPEN FLOW, MCFD	31300	1350	70
COMPONENT, MOLE PCT			
METHANE	80.8	90.3	96.3
ETHANE	10.7	4.1	1.3
PROPANE	4.3	1.5	0.1
N-BUTANE	1.2	0.5	0.1
ISOBUTANE	0.6	0.3	TRACE
N-PENTANE	0.3	0.1	TRACE
ISOPENTANE	0.3	0.2	0.0
CYCLOPENTANE	0.1	0.2	TRACE
HEXANES PLUS	0.2	0.3	0.1
NITROGEN	0.7	1.3	1.9
OXYGEN	0.1	0.1	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	1.0	0.1
HELIUM	0.04	0.03	0.01
HEATING VALUE*	1222	1090	1010
SPECIFIC GRAVITY	0.708	0.634	0.575

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 187 SAMPLE 17351	INDEX 188 SAMPLE 17478	INDEX 189 SAMPLE 17321
STATE	TEXAS	TEXAS	TEXAS
COUNTY	LIBERTY	LIPSCOMB	LIPSCOMB
FIELD	COLONEL	KIOWA CREEK	WILEY-TONKAWA
WELL NAME	B. E. QUINN NO. 1	BRILLHART "D" NO. 2	TERREL NO. 1
LOCATION	JAMES HUMPHRIES SUR. A-212	SEC.851,BLK 43,H&TC SUR.	SEC. 80, BLK.10, H&TB SUR.
OWNER	WESTLAND OIL DEV. CORP.	PHILLIPS PETROLEUM CO.	ARGONAUT ENERGY CORP.
COMPLETED	11/02/83	04/23/84	06/15/83
SAMPLED	07/09/84	10/11/84	06/12/84
FORMATION	EOCE-WILCOX	PENN-CLEVELAND	PENN-TONKAWA
GEOLOGIC PROVINCE CODE	220	360	360
DEPTH, FEET	14000	7520	6276
WELLHEAD PRESSURE,PSIG	11000	1430	1342
OPEN FLOW, MCFD	1900	7500	3160
COMPONENT, MOLE PCT			
METHANE	88.9	87.7	87.4
ETHANE	4.7	6.9	6.3
PROPANE	0.9	2.4	2.3
N-BUTANE	0.2	0.8	0.7
ISOBUTANE	0.2	0.3	0.3
N-PENTANE	0.1	0.3	0.3
ISOPENTANE	TRACE	0.2	0.2
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.2	0.2	0.2
NITROGEN	0.0	0.4	1.1
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	4.8	0.5	0.9
HELIUM	TRACE	0.06	0.11
HEATING VALUE*	1036	1147	1127
SPECIFIC GRAVITY	0.646	0.651	0.653

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 190 SAMPLE 17350	INDEX 191 SAMPLE 17505	INDEX 192 SAMPLE 17296
STATE	TEXAS	TEXAS	TEXAS
COUNTY	LIVE OAK	MCPULLEN	MONTGOMERY
FIELD	MIKESKA N	LA GOLLA E	WILDCAT
WELL NAME	PATRICIA CROCKER NO. 1	CLIFTON WHEELER NO. 1	FRIENDSWOOD DEV. NO. 1
LOCATION	J. F. TORREY SUR. 305, A-466	AB&M SUR.,191,A-508	J. R. GROSS SUR., A-719
OWNER	GOLDKING PRODUCTION CO.	TEXAS GAS EXPLORATION CORP.	VOLVO PETROLEUM, INC.
COMPLETED	--/--/80	06/13/83	08/--/82
SAMPLED	07/03/84	09/25/84	05/--/84
FORMATION	ECCE-WILCOX	CRET-SLIGO	ECCE-WILCOX A-2
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	10300	16513	9983
WELLHEAD PRESSURE,PSIG	NOT GIVEN	12201	NOT GIVEN
OPEN FLOW, MCFD	NOT GIVEN	20408	2403
COMPONENT, MOLE PCT			
METHANE	81.2	84.3	86.5
ETHANE	7.8	0.1	6.4
PROPANE	4.3	TRACE	2.4
N-BUTANE	1.2	0.0	0.6
ISOBUTANE	0.7	0.0	0.5
N-PENTANE	0.2	0.0	0.1
ISOPENTANE	0.5	0.0	0.6
CYCLOPENTANE	0.2	0.0	0.2
HEXANES PLUS	0.2	0.0	0.3
NITROGEN	0.0	8.0	0.3
OXYGEN	0.0	0.0	0.1
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.0	TRACE	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	3.7	7.5	2.0
HELIUM	TRACE	0.02	0.01
HEATING VALUE*	1186	856	1143
SPECIFIC GRAVITY	0.723	0.660	0.673

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 193 SAMPLE 17212	INDEX 194 SAMPLE 17372	INDEX 195 SAMPLE 17200
STATE	TEXAS	TEXAS	TEXAS
COUNTY	OCS	OLDHAM	ROBERTS
FIELD	OCS-G-4557	WILDCAT	HALE RANCH
WELL NAME	NO. B-1	RAFTER O RANCH NO. 1-28	R. D. MILLS NO. 1
LOCATION	BRAZOS BLK. 578	SEC. 28, BLK.5, GC&SF SUR.	TRACT 1-B,CLAY CO.SCH.LD SJR
OWNER	SUPERIOR OIL CO.	BAKER & TAYLOR DRILLING CO.	AMAX PETROLEUM CORP.
COMPLETED	06/23/82	--/--/84	05/15/83
SAMPLED	03/16/84	08/12/84	02/20/84
FORMATION	MIOC-BIG H	PENN-CANYON LS	MISS-KINDERHOOK L
GEOLOGIC PROVINCE CODE	956	435	360
DEPTH, FEET	11320	6412	12478
WELLHEAD PRESSURE,PSIG	1215	870	2900
OPEN FLOW, MCFD	14411	3000	1900
COMPONENT, MOLE PCT			
METHANE	95.3	21.4	88.4
ETHANE	1.6	3.6	6.6
PROPANE	0.3	2.2	2.2
N-BUTANE	0.1	0.6	0.6
ISOBUTANE	TRACE	0.3	0.4
N-PENTANE	TRACE	0.2	0.1
ISOPENTANE	TRACE	0.1	0.2
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	0.9	69.6	0.6
OXYGEN	0.0	0.0	TRACE
ARGON	TRACE	0.4	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.7	0.3	0.5
HELIUM	TRACE	1.20	0.05
HEATING VALUE*	1010	387	1122
SPECIFIC GRAVITY	0.590	0.905	0.638

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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73

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 196 SAMPLE 17207	INDEX 197 SAMPLE 17387	INDEX 198 SAMPLE 17272
STATE	TEXAS	TEXAS	TEXAS
COUNTY	SHELBY	SHERMAN	TOM GREEN
FIELD	MEI	PALO DURO CREEK	FORTSON-BLRKE
WELL NAME	HOWARD NO. 1	KATHRYN "A" NO.2	MUNN NO. 1
LOCATION	J. E. MYRICK SUR., A-472	SEC. 8, BLK.3B, GH&H SUR.	SEC.1119,TTRR SUR.,A-4367
OWNER	MARSHALL EXPLORATION INC.	PHILLIPS PETROLEUM CO.	HEXAGON OIL & GAS, INC.
COMPLETED	09/08/83	01/16/84	06/13/83
SAMPLED	03/13/84	08/21/84	05/02/84
FORMATION	CRET-PETTIT	MISS-ST. LOUIS	PENN-CANYON
GEOLOGIC PROVINCE CODE	260	360	430
DEPTH, FEET	6508	6062	6253
WELLHEAD PRESSURE,PSIG	3340	1515	2060
OPEN FLOW, MCFD	14628	5300	9652
COMPONENT, MOLE PCT			
METHANE	96.6	87.8	66.3
ETHANE	0.6	3.8	12.4
PROPANE	0.2	1.9	7.3
N-BUTANE	0.1	0.7	1.8
ISOBUTANE	0.1	0.4	1.5
N-PENTANE	0.1	0.2	0.6
ISOPENTANE	TRACE	0.3	0.6
CYCLOPENTANE	0.1	0.2	1.0
HEXANES PLUS	0.2	0.3	1.7
NITROGEN	0.8	4.1	6.4
OXYGEN	TRACE	TRACE	0.1
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	0.1	0.2
HELIUM	0.02	0.23	0.11
HEATING VALUE*	1023	1088	1370
SPECIFIC GRAVITY	0.582	0.647	0.851

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 199 SAMPLE 17273	INDEX 200 SAMPLE 17397	INDEX 201 SAMPLE 17434
STATE	TEXAS	TEXAS	TEXAS
COUNTY	TOM GREEN	WEBB	WHEELER
FIELD	MUNN-WESTEX	RAPTURE	BRISCOE-MORROW
WELL NAME	MUNN NO. 2-A	P. M. FROST NO. 2	FINSTERWALD NO. 1
LOCATION	SEC. 1119,TTRR SUR.	CCSD & RGNG SUR., A-1041	SEC.51,BLK.M-1,H&GN SUR.
OWNER	HEXAGON OIL & GAS, INC.	CONOCO, INC.	CAMBRIDGE & NAIL
COMPLETED	09/12/83	08/24/84	10/08/81
SAMPLED	05/02/84	08/24/84	10/01/84
FORMATION	PENN-CANYON	EOCE-WALKER	PENN-MORROW PURYEAR
GEOLOGIC PROVINCE CODE	430	220	360
DEPTH, FEET	6355	9686	14535
WELLHEAD PRESSURE,PSIG	2110	1400	6165
OPEN FLOW, MCFD	1713	1720	8300
COMPONENT, MOLE PCT			
METHANE	70.6	81.9	95.6
ETHANE	12.6	8.5	1.3
PROPANE	6.2	3.7	0.1
N-BUTANE	1.3	1.0	0.1
ISOBUTANE	0.7	0.9	0.0
N-PENTANE	0.3	0.2	0.1
ISOPENTANE	0.2	0.7	0.0
CYCLOPENTANE	0.3	0.1	TRACE
HEXANES PLUS	0.6	0.3	0.1
NITROGEN	6.7	0.2	0.7
OXYGEN	TRACE	TRACE	0.0
ARGON	0.0	TRACE	0.1
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	2.4	1.9
HELIUM	0.12	TRACE	0.02
HEATING VALUE*	1233	1199	1008
SPECIFIC GRAVITY	0.770	0.713	0.595

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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75

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 202 SAMPLE 17251	INDEX 203 SAMPLE 17400	INDEX 204 SAMPLE 17323
STATE	TEXAS	UTAH	UTAH
COUNTY	WHEELER	EMERY	GRAND
FIELD	GAGEBY CREEK	WILDCAT	BAR X
WELL NAME	HOLMES NO. 1	RANGE CREEK - FED. NO. 1	NORTH BAR X NO. 1
LOCATION	SEC. 60, BLK. A-4, H&GN SUR.	SEC. 6, T18S, R16E	SEC. 1, T17S, R25E
OWNER	DAVIS OIL CO.	GULF OIL EXP. & PROD. CO.	BEARTOOTH OIL & GAS CO.
COMPLETED	10/25/82	02/--/83	05/--/84
SAMPLED	04/13/84	08/--/84	06/11/84
FORMATION	PENN-MORROW	CRET-DAKOTA	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	360	585	585
DEPTH, FEET	13609	6022	3603
WELLHEAD PRESSURE, PSIG	6403	1700	860
OPEN FLOW, MCFD	2500	2760	1148
COMPONENT, MOLE PCT			
METHANE	96.2	95.8	84.9
ETHANE	1.7	1.4	4.3
PROPANE	0.1	0.3	1.3
N-BUTANE	0.1	0.1	0.3
ISOBUTANE	0.0	0.1	0.3
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.0	TRACE	0.1
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	0.3	2.0	7.7
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.4	0.1	0.8
HELIUM	0.02	0.05	0.08
HEATING VALUE*	1020	1019	1005
SPECIFIC GRAVITY	0.585	0.581	0.643

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 205 SAMPLE 17495	INDEX 206 SAMPLE 17174	INDEX 207 SAMPLE 17295
STATE	UTAH	UTAH	UTAH
COUNTY	GRAND	GRAND	SAN JUAN
FIELD	BRYSON	SAN ARROYO	ANETH
WELL NAME	TOC. TXO POGO USA NO. 15-9	CRECO FED. NO. 1	MCELMO CREEK NO. T-18
LOCATION	SEC. 15, T17S, R24E	SEC. 5, T16S, R26E	SEC. 9, T41S, R25E
OWNER	TENNECO OIL CO.	TXO PRODUCTION CORP.	SUPERIOR OIL CO.
COMPLETED	09/02/82	02/--/82	12/19/83
SAMPLED	10/15/84	02/13/84	05/--/84
FORMATION	CRET-DAKOTA	CRET-DAKOTA	PENN-DESERT CREEK
GEOLOGIC PROVINCE CODE	585	585	585
DEPTH, FEET	5333	5600	5582
WELLHEAD PRESSURE,PSIG	460	500	225
OPEN FLOW, MCFD	275	750	505
COMPONENT, MOLE PCT			
METHANE	93.5	88.1	74.4
ETHANE	3.5	5.5	14.1
PROPANE	0.7	1.6	5.8
N-BUTANE	0.1	0.4	1.6
ISOBUTANE	0.1	0.3	0.8
N-PENTANE	0.1	0.2	0.4
ISOPENTANE	0.1	0.2	0.4
CYCLOPENTANE	TRACE	0.1	0.2
HEXANES PLUS	0.1	0.2	0.3
NITROGEN	0.7	2.0	1.8
OXYGEN	TRACE	TRACE	0.1
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.2	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	1.2	TRACE
HELIUM	0.06	0.19	0.04
HEATING VALUE*	1049	1087	1295
SPECIFIC GRAVITY	0.599	0.642	0.753

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 208 SAMPLE 17373	INDEX 209 SAMPLE 17180	INDEX 210 SAMPLE 17283
STATE	UTAH	UTAH	UTAH
COUNTY	SUMMIT	UINTAH	UINTAH
FIELD	CAVE CREEK	BONANZA	ISLAND
WELL NAME	CAVE CREEK NO. 12-30	FED. NO. 3-15	ISLAND UNIT NO. 15
LOCATION	SEC. 30, T5N, R8E	SEC. 15, T10S, R23E	SEC. 7, T10S, R20E
OWNER	THE ANSCHUTZ CORP.	LOMAX EXPLORATION CO.	WEXPRO CO.
COMPLETED	06/04/83	10/04/83	08/24/83
SAMPLED	08/06/84	01/03/84	05/03/84
FORMATION	JURA-TWIN CREEK	CRET-MESAVERDE	EOCE-WASATCH
GEOLOGIC PROVINCE CODE	570	575	575
DEPTH, FEET	6908	7188	6661
WELLHEAD PRESSURE, PSIG	2975	2171	1050
OPEN FLOW, MCFD	5643	1124	3247
COMPONENT, MOLE PCT			
METHANE	75.5	50.6	93.3
ETHANE	8.3	4.4	4.3
PROPANE	3.8	2.0	1.2
N-BUTANE	1.3	0.6	0.3
ISOBUTANE	1.4	0.5	0.2
N-PENTANE	0.5	0.2	0.1
ISOPENTANE	0.5	0.2	0.1
CYCLOPENTANE	0.2	0.1	TRACE
HEXANES PLUS	0.8	0.2	0.1
NITROGEN	7.3	0.2	0.2
OXYGEN	TRACE	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	1.2	0.1
HELIUM	0.09	TRACE	TRACE
HEATING VALUE*	1154	1117	1084
SPECIFIC GRAVITY	0.745	0.641	0.603

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 211 SAMPLE 17181	INDEX 212 SAMPLE 17327	INDEX 213 SAMPLE 17239
STATE	WEST VIRGINIA	WYOMING	WYOMING
COUNTY	MCDOWELL	BIG HORN	CAMPBELL
FIELD	MCDOWELL	DOBIE CREEK	ELK DRAW
WELL NAME	ROGERS NO. 25	DOBIE CREEK-GETTY 20-6	SAGE BRUSH FED. 1-11
LOCATION	SANDY RIVER DIST.	SEC. 20, T49N, R93W	SEC. 11, T51N, R76W
OWNER	ASHLAND EXPLORATION, INC.	AMERICAN QUASAR PET. CO.	AMINOIL, INC.
COMPLETED	09/10/82	10/15/82	12/19/82
SAMPLED	02/13/84	06/12/84	03/10/84
FORMATION	MISS-BEREA&BIGLIME&DEVOSHALE	CRET-MUDDY	CRET-MUDDY
GEOLOGIC PROVINCE CODE	160	520	515
DEPTH, FEET	3965	9958	10120
WELLHEAD PRESSURE,PSIG	775	2200	4000
OPEN FLOW, MCFD	5180	460	1500
COMPONENT, MOLE PCT			
METHANE	97.4	76.6	80.2
ETHANE	1.6	14.3	10.9
PROPANE	0.1	5.1	3.8
N-BUTANE	TRACE	1.2	0.8
ISOBUTANE	0.0	0.8	0.6
N-PENTANE	TRACE	0.3	0.2
ISOPENTANE	TRACE	0.2	0.2
CYCLOPENTANE	TRACE	0.1	0.2
HEXANES PLUS	TRACE	0.2	0.4
NITROGEN	0.6	0.5	0.5
OXYGEN	0.0	TRACE	TRACE
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.1	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.6	2.2
HELIUM	0.09	0.01	0.01
HEATING VALUE*	1018	1267	1199
SPECIFIC GRAVITY	0.566	0.730	0.712

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 214 SAMPLE 17269	INDEX 215 SAMPLE 17241	INDEX 216 SAMPLE 17141
STATE	WYOMING	WYOMING	WYOMING
COUNTY	CARBON	CARBON	FREMONT
FIELD	CRESTEN S	SAVERY	MADDEN DEEP
WELL NAME	SOCO HUSKYFED NO.1C-18-17-92	SAVERY UNIT NO. G-15	HENDRY NO. 2-8
LOCATION	SEC. 18, T17N, R92W	SEC. 15, T13N, R89W	SEC. 8, T38N, R90W
OWNER	SOCO-SNYDER OIL CO.	BENSON-MONTIN-GREER DRILLING	MONSANTO CO.
COMPLETED	08/25/82	11/13/83	06/14/82
SAMPLED	04/20/84	04/--/84	11/29/83
FORMATION	CRET-MESAVERDE	CRET-MESAVERDE	CRET-CODY
GEOLOGIC PROVINCE CODE	535	535	530
DEPTH, FEET	8462	801	17168
WELLHEAD PRESSURE,PSIG	3775	95	7076
OPEN FLOW, MCFD	180	2000	250000
COMPONENT, MOLE PCT			
METHANE	87.8	98.0	96.8
ETHANE	5.2	0.4	0.1
PROPANE	2.0	0.1	TRACE
N-BUTANE	0.6	0.0	0.0
ISOBUTANE	0.5	0.0	0.0
N-PENTANE	0.2	0.0	0.0
ISOPENTANE	0.2	0.0	0.0
CYCLOPENTANE	0.1	0.0	0.0
HEXANES PLUS	0.2	0.0	0.0
NITROGEN	0.4	1.2	0.1
OXYGEN	TRACE	TRACE	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.8	0.1	3.0
HELIUM	TRACE	0.03	TRACE
HEATING VALUE*	1103	1002	982
SPECIFIC GRAVITY	0.660	0.562	0.585

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 217 SAMPLE 17227	INDEX 218 SAMPLE 17405	INDEX 219 SAMPLE 17156
STATE	WYOMING	WYOMING	WYOMING
COUNTY	LINCOLN	NIOBRARA	SUBLETTE
FIELD	BIRD CANYON	BOGGY CREEK	JOHNSON RIDGE
WELL NAME	HAUN-FED. NO. 20-5	CHEROKEE FED. NO. 23-13	S 34-34
LOCATION	SEC. 5, T26N, R111W	SEC. 13, T40N, R64W	SEC. 34, T30N, R113W
OWNER	ENERGETICS, INC.	CHEROKEE OIL PRODUCTION INC.	BELCO DEVELOPMENT CORP.
COMPLETED	06/08/83	06/01/83	09/09/83
SAMPLED	03/27/84	09/01/84	01/09/84
FORMATION	CRET-BEAR RIVER	CRET-TURNER	CRET-TRANSITIONAL MESAVERDE
GEOLOGIC PROVINCE CODE	535	515	535
DEPTH, FEET	NOT GIVEN	4898	2800
WELLHEAD PRESSURE,PSIG	600	450	1205
OPEN FLOW, MCFD	976	18	3068
COMPONENT, MOLE PCT			
METHANE	88.2	56.2	85.9
ETHANE	6.6	10.9	7.3
PROPANE	2.6	15.8	2.6
N-BUTANE	0.6	6.7	0.6
ISOBUTANE	0.4	3.0	0.7
N-PENTANE	0.1	1.8	0.2
ISOPENTANE	0.4	2.0	0.2
CYCLOPENTANE	0.1	0.5	0.1
HEXANES PLUS	0.1	1.1	0.2
NITROGEN	0.6	1.5	0.1
OXYGEN	TRACE	TRACE	0.1
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.5	2.2
HELIUM	0.01	0.01	0.02
HEATING VALUE*	1143	1739	1143
SPECIFIC GRAVITY	0.648	1.035	0.674

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 220 SAMPLE 17226	INDEX 221 SAMPLE 17225	INDEX 222 SAMPLE 17354
STATE	WYOMING	WYOMING	WYOMING
COUNTY	SWEETWATER	SWEETWATER	SWEETWATER
FIELD	BIRD CANYON	BUCKHORN CANYON	FABIAN DITCH
WELL NAME	HAUN-FED. NO. 40-9	LITTLE MONUMENT U.II NO30-11	STRANGE NO. 1-22
LOCATION	SEC. 9, T26N, R111W	SEC. 11, T25N, R111W	SEC. 22, T22N, R112W
OWNER	ENERGETICS, INC.	ENERGETICS, INC.	TENNECO OIL EXP. & PROD. CO.
COMPLETED	08/. /83	08/15/83	07/12/84
SAMPLED	03/29/84	03/29/84	07/13/84
FORMATION	CRET-BEAR RIVER & FRONTIER	CRET-FRONTIER	CRET-DAKOTA
GEOLOGIC PROVINCE CODE	535	535	535
DEPTH, FEET	9204	9355	12030
WELLHEAD PRESSURE,PSIG	500	850	4500
OPEN FLOW, MCFD	280	137	305
COMPONENT, MOLE PCT			
METHANE	88.0	52.6	81.0
ETHANE	5.6	3.8	9.5
PROPANE	2.5	1.2	3.1
N-BUTANE	0.8	0.3	0.6
ISOBUTANE	0.4	0.1	0.8
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.4	0.1	0.7
CYCLOPENTANE	0.1	0.1	0.3
HEXANES PLUS	0.2	0.1	0.5
NITROGEN	1.5	1.1	2.3
OXYGEN	TRACE	TRACE	0.4
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.4	0.6
HELIUM	0.01	TRACE	0.01
HEATING VALUE*	1132	1068	1189
SPECIFIC GRAVITY	0.652	0.607	0.704

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 223 SAMPLE 17229	INDEX 224 SAMPLE 17483	INDEX 225 SAMPLE 17228
STATE	WYOMING	WYOMING	WYOMING
COUNTY	SWEETWATER	SWEETWATER	SWEETWATER
FIELD	HORN CANYON	LEUCITE HILLS	LINCOLN ROAD
WELL NAME	BLUE FOREST UNIT NO. 30-5	ANADARKO-FED. NO. B-32	LMU FED. NO. 30-28
LOCATION	SEC. 5, T24N, R110W	SEC. 32, T22N, R103W	SEC. 28, T25N, R111W
OWNER	ENERGETICS, INC.	LUFF EXPLORATION CO.	ENERGETICS, INC.
COMPLETED	03/17/83	03/03/83	05/13/83
SAMPLED	03/29/84	10/10/84	03/29/84
FORMATION	CRET-DAKOTA	CRET-DAKOTA	CRET-FRONTIER
GEOLOGIC PROVINCE CODE	535	535	535
DEPTH, FEET	11218	6532	10010
WELLHEAD PRESSURE,PSIG	950	520	900
OPEN FLOW, MCFD	832	1450	1477
COMPONENT, MOLE PCT			
METHANE	86.1	94.1	94.9
ETHANE	6.4	3.5	2.8
PROPANE	3.6	0.8	0.6
N-BUTANE	1.0	0.2	0.2
ISOBUTANE	0.5	0.1	TRACE
N-PENTANE	0.2	0.1	0.1
ISOPENTANE	0.5	0.1	0.1
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.2	0.1	0.1
NITROGEN	0.9	0.6	0.6
OXYGEN	0.1	TRACE	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	0.5	0.7
HELIUM	0.01	0.01	0.01
HEATING VALUE*	1175	1060	1047
SPECIFIC GRAVITY	0.675	0.598	0.595

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 226 SAMPLE 17150	INDEX 227 SAMPLE 17315	INDEX 228 SAMPLE 17172
STATE	WYOMING	WYOMING	WYOMING
COUNTY	SWEETWATER	SWEETWATER	SWEETWATER
FIELD	MONUMENT BUTTE	NITCHIE GULCH	PRETTY WATER CREEK
WELL NAME	MONUMENT BUTTE UNIT NO. 31-3	UNIT NO. 12-18	FED. NO. 1-2
LOCATION	SEC. 3, T25N, R110W	SEC. 18, T23N, R103W	SEC. 2, T15N, R104W
OWNER	ENERGETICS, INC.	TERRA RESOURCES, INC.	GREAT WESTERN DRILLING CO.
COMPLETED	12/--/82	12/09/83	08/22/81
SAMPLED	12/--/83	06/07/84	02/05/84
FORMATION	CRET-DAKOTA	CRET-FRONTIER 3RD	PERM-PHOSPHORIA
GEOLOGIC PROVINCE CODE	535	535	535
DEPTH, FEET	11508	8050	6910
WELLHEAD PRESSURE,PSIG	1025	840	1854
OPEN FLOW, MCFD	1797	1800	5390
COMPONENT, MOLE PCT			
METHANE	89.4	94.8	34.7
ETHANE	3.7	3.4	2.5
PROPANE	2.4	0.7	1.5
N-BUTANE	0.8	0.2	1.1
ISOBUTANE	0.6	0.1	0.9
N-PENTANE	0.2	0.1	0.9
ISOPENTANE	0.5	TRACE	0.6
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.2	0.1	0.7
NITROGEN	1.4	0.4	27.6
OXYGEN	0.2	0.0	TRACE
ARGON	TRACE	TRACE	0.2
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	TRACE
CARBON DIOXIDE	0.6	0.2	28.2
HELIUM	0.01	0.01	0.92
HEATING VALUE*	1125	1059	606
SPECIFIC GRAVITY	0.652	0.591	1.046

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

84

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 229 SAMPLE 17179	INDEX 230 SAMPLE 17178	INDEX 231 SAMPLE 17263
STATE	WYOMING	WYOMING	WYOMING
COUNTY	SWEETWATER	SWEETWATER	SWEETWATER
FIELD	WILD HARE GULCH	WILD HARE GULCH	WILDCAT
WELL NAME	SEVEN MILE GULCH NO. 14	SEVEN MILE GULCH NO. 14	DRIPPING ROCK NO. 1
LOCATION	SEC. 18, T20N, R111W	SEC. 18, T20N, R111W	SEC. 17, T14N, R94W
OWNER	ANADARKO PRODUCTION CO.	ANADARKO PRODUCTION CO.	MOUNTAIN FUEL SUPPLY CO.
COMPLETED	05/17/82	05/17/82	01/16/84
SAMPLED	02/15/84	02/15/84	04/19/84
FORMATION	CRET-DAKOTA	CRET-FRONTIER	CRET-ALMOND
GEOLOGIC PROVINCE CODE	535	535	535
DEPTH, FEET	12534	11919	12557
WELLHEAD PRESSURE, PSIG	2600	3500	7400
OPEN FLOW, MCFD	NOT GIVEN	NOT GIVEN	8500
COMPONENT, MOLE PCT			
METHANE	79.6	81.0	92.4
ETHANE	11.1	11.7	3.3
PROPANE	4.9	3.7	0.5
N-BUTANE	1.0	0.7	0.1
ISOBUTANE	0.8	0.6	0.1
N-PENTANE	0.3	0.1	0.1
ISOPENTANE	0.4	0.4	TRACE
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.2	0.2	0.1
NITROGEN	0.9	0.9	0.0
OXYGEN	0.1	0.1	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	0.5	3.5
HELIUM	0.01	0.01	TRACE
HEATING VALUE*	1237	1205	1024
SPECIFIC GRAVITY	0.715	0.695	0.618

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 232 SAMPLE 17324	INDEX 233 SAMPLE 17163	INDEX 234 SAMPLE 17353
STATE	WYOMING	WYOMING	WYOMING
COUNTY	SWEETWATER	UINTA	UINTA
FIELD	WINDMILL DRAW	BUTCHER KNIFE SPRINGS	CHURCH BUTTES
WELL NAME	WINDMILL DRAW NO. 4	UNIT NO. 8	CHURCH BUTTES NO. 31
LOCATION	SEC. 1, T15N, R94W	SEC. 12, T14N, R113W	SEC. 9, T17N, R112W
OWNER	CITIES SERVICE OIL&GAS CORP.	CELSIUS ENERGY CO.	MT. FUEL SUPPLY/CHAMPLIN PET
COMPLETED	10/07/82	10/11/83	NOT GIVEN
SAMPLED	06/14/84	01/23/84	07/12/84
FORMATION	CRET-MESAVERDE	CRET-DAKOTA	MISS-MADISON
GEOLOGIC PROVINCE CODE	535	535	535
DEPTH, FEET	10948	13040	18398
WELLHEAD PRESSURE,PSIG	4930	5518	NOT GIVEN
OPEN FLOW, MCFD	1734	7560	13723
COMPONENT, MOLE PCT			
METHANE	89.8	89.5	2.8
ETHANE	5.6	6.2	0.1
PROPANE	0.9	1.6	0.2
N-BUTANE	0.2	0.3	0.3
ISOBUTANE	0.1	0.3	0.1
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.1	0.2	0.5
CYCLOPENTANE	0.1	TRACE	0.3
HEXANES PLUS	0.1	0.1	0.3
NITROGEN	0.0	0.7	7.8
OXYGEN	TRACE	0.1	0.6
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.0	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.9
CARBON DIOXIDE	2.9	0.9	85.5
HELIUM	TRACE	0.02	0.35
HEATING VALUE*	1061	1097	107
SPECIFIC GRAVITY	0.632	0.631	1.461

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 235 SAMPLE 17119		
STATE	WYOMING		
COUNTY	UINTA		
FIELD	HENRY		
WELL NAME	HENRY UNIT NO. 8		
LOCATION	SEC. 33, T14N, R113W		
OWNER	FOREST OIL CORP.		
COMPLETED	07/21/83		
SAMPLED	10/19/83		
FORMATION	CRET-DAKOTA		
GEOLOGIC PROVINCE CODE	535		
DEPTH, FEET	13522		
WELLHEAD PRESSURE, PSIG	3900		
OPEN FLOW, MCFD	1636		
COMPONENT, MOLE PCT			
METHANE	84.5		
ETHANE	7.3		
PROPANE	3.5		
N-BUTANE	0.8		
ISOBUTANE	0.9		
N-PENTANE	0.2		
ISOPENTANE	0.3		
CYCLOPENTANE	0.1		
HEXANES PLUS	0.3		
NITROGEN	1.0		
OXYGEN	TRACE		
ARGON	TRACE		
HYDROGEN	0.0		
HYDROGEN SULFIDE**	0.0		
CARBON DIOXIDE	1.0		
HELIUM	0.01		
HEATING VALUE*	1175		
SPECIFIC GRAVITY	0.684		

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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87

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 1 SAMPLE 17440	INDEX 2 SAMPLE 17441	INDEX 3 SAMPLE 17439
STATE	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY	CONTRA COSTA	CONTRA COSTA	CONTRA COSTA
FIELD	CANADIAN GAS	OAKLEY	SACRAMENTO RIVER W&E
PLANT NAME	ANTIOCH TERMINAL	BRENTWOOD DEHYDRATOR STA.	ANTIOCH TERMINAL
LOCATION	36 IN. LINE VALVE 146	12 IN. LINE	16 IN. LINE VALVE 50
OWNER	PACIFIC GAS & ELECTRIC CO.	PACIFIC GAS & ELECTRIC CO.	PACIFIC GAS & ELECTRIC CO.
SAMPLED	09/19/84	09/19/84	09/19/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	730	730	730
PRESSURE, PSIG	810	550	315
FLOW, MCFD	600000	55000	44000
COMPONENT, MOLE PCT			
METHANE	96.2	92.5	92.8
ETHANE	1.5	4.1	3.3
PROPANE	TRACE	1.2	0.9
N-BUTANE	0.1	0.3	0.2
ISOBUTANE	0.0	0.2	0.2
N-PENTANE	0.1	TRACE	TRACE
ISOPENTANE	TRACE	0.2	0.1
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	TRACE	0.1	0.1
NITROGEN	1.6	0.4	1.9
OXYGEN	TRACE	0.0	TRACE
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.5	0.4
HELIUM	0.05	TRACE	TRACE
HEATING VALUE*	1009	1080	1049
SPECIFIC GRAVITY	0.572	0.609	0.604

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 4 SAMPLE 17436	INDEX 5 SAMPLE 17452	INDEX 6 SAMPLE 17451
STATE	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY	FRESNO	KERN	KERN
FIELD	CHENEY	COLES LEVEE N	COLES LEVEE S
PLANT NAME	CHENEY FIELD COMPRESSOR UNIT	ATLANTIC RICHFIELD-M4702	MARATHON INSTALLATION-M4709
LOCATION	4 IN. DISCHARGE	10 IN. LINE NO. 103	34 IN. LINE NO. 225
OWNER	PACIFIC GAS & ELECTRIC CO.	SOUTHERN CALIFORNIA GAS CO.	SOUTHERN CALIFORNIA GAS CO.
SAMPLED	09/18/84	09/18/84	09/19/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	745	745	745
PRESSURE, PSIG	485	420	590
FLOW, MCFD	200	3060	42500
COMPONENT, MOLE PCT			
METHANE	83.6	84.2	91.3
ETHANE	5.9	10.4	7.1
PROPANE	4.5	2.1	0.8
N-BUTANE	1.4	TRACE	0.1
ISOBUTANE	1.5	0.0	0.0
N-PENTANE	0.3	0.1	0.1
ISOPENTANE	0.6	0.0	TRACE
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.2	TRACE	TRACE
NITROGEN	1.3	1.0	0.3
OXYGEN	TRACE	0.1	TRACE
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.6	2.0	0.3
HELIUM	0.01	TRACE	TRACE
HEATING VALUE*	1219	1098	1080
SPECIFIC GRAVITY	0.708	0.652	0.605

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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89

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 7 SAMPLE 17449	INDEX 8 SAMPLE 17448	INDEX 9 SAMPLE 17450
STATE	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY	KERN	KERN	KERN
FIELD	CYMRIC	GOSFORD	MCKITTRICK, ELK HILLS
PLANT NAME	GETTY OIL CO. - M4356	TENNECO - M3628	12 IN. LINE NO. 303
LOCATION	10 IN. LINE NO. 133	4 IN. LINE NO. 5024	12 IN. LINE NO. 303
OWNER	SOUTHERN CALIFORNIA GAS CO.	SOUTHERN CALIFORNIA GAS CO.	SOUTHERN CALIFORNIA GAS CO.
SAMPLED	09/18/84	09/19/84	09/18/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	745	745	745
PRESSURE, PSIG	380	388	375
FLOW, MCFD	1200	210	7600
COMPONENT, MOLE PCT			
METHANE	85.9	77.5	84.7
ETHANE	6.4	8.0	9.2
PROPANE	3.5	4.9	1.1
N-BUTANE	1.0	0.9	0.2
ISOBUTANE	0.4	0.5	0.0
N-PENTANE	0.2	0.1	0.0
ISOPENTANE	0.1	TRACE	0.1
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	TRACE	TRACE	TRACE
NITROGEN	2.3	5.3	0.1
OXYGEN	0.0	1.2	0.1
ARGON	TRACE	0.1	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	1.5	4.5
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1136	1107	1062
SPECIFIC GRAVITY	0.657	0.710	0.661

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 10 SAMPLE 17435	INDEX 11 SAMPLE 17458	INDEX 12 SAMPLE 17937
STATE	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY	KINGS	LOS ANGELES	MADERA
FIELD	TEXAS GAS	CASTAIC, PICO PORTERIO	VERNALIS
PLANT NAME	KETTLEMAN COMPRESSOR STA.	SUN GAS - M4512	VERNALIS FIELD COMPRESSR STA
LOCATION	2-34 DISCH.	8 IN. LINE	6 IN. SUCTION
OWNER	PACIFIC GAS & ELECTRIC CO.	SOUTHERN CALIFORNIA GAS CO.	PACIFIC GAS & ELECTRIC CO.
SAMPLED	09/18/84	09/26/84	09/19/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	745	760	745
PRESSURE, PSIG	755	240	410
FLOW, MCFD	1021000	1500	3000
COMPONENT, MOLE PCT			
METHANE	89.9	95.9	88.4
ETHANE	6.1	3.4	0.7
PROPANE	1.3	0.1	0.1
N-BUTANE	0.2	0.0	0.0
ISOBUTANE	0.1	0.0	0.0
N-PENTANE	0.1	0.0	0.0
ISOPENTANE	TRACE	0.0	0.0
CYCLOPENTANE	TRACE	0.0	0.0
HEXANES PLUS	0.1	0.0	0.0
NITROGEN	1.3	0.4	10.7
OXYGEN	TRACE	TRACE	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.9	0.2	TRACE
HELIUM	0.04	TRACE	0.01
HEATING VALUE*	1073	1035	911
SPECIFIC GRAVITY	0.621	0.576	0.609

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 13 SAMPLE 17445	INDEX 14 SAMPLE 17442	INDEX 15 SAMPLE 17438
STATE	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY	SACRAMENTO	SACRAMENTO	SAN JOAQUIN
FIELD	BEEHIVE BEND, T. HUNTER, ZAMORA	RIO VISTA, LINDSEY SLOUGH	LATHROP, UNION ISLAND
PLANT NAME	SACRAMENTO P.G.&E. LOAD CENT	DEHYDRATOR STA. NO. 196	LATHROP FIELD GATHERING UNIT
LOCATION	12 IN. LINE	12 IN. LINE	12 IN. SUCTION
OWNER	PACIFIC GAS & ELECTRIC CO.	PACIFIC GAS & ELECTRIC CO.	PACIFIC GAS & ELECTRIC CO.
SAMPLED	09/21/84	09/20/84	09/19/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	730	730	730
PRESSURE, PSIG	500	645	700
FLOW, MCFD	60000	50000	50000
COMPONENT, MOLE PCT			
METHANE	93.9	91.8	84.9
ETHANE	0.3	3.8	0.4
PROPANE	TRACE	1.3	0.1
N-BUTANE	0.0	0.3	0.0
ISOBUTANE	0.0	0.2	0.0
N-PENTANE	0.0	TRACE	0.0
ISOPENTANE	0.0	0.2	0.0
CYCLOPENTANE	0.0	0.1	0.0
HEXANES PLUS	0.0	0.1	0.0
NITROGEN	5.7	1.9	14.1
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.3	0.6
HELIUM	TRACE	TRACE	0.01
HEATING VALUE*	957	1066	870
SPECIFIC GRAVITY	0.579	0.613	0.622

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 16 SAMPLE 17453	INDEX 17 SAMPLE 17454	INDEX 18 SAMPLE 17443
STATE	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY	SANTA BARBARA	SANTA BARBARA	SOLANO
FIELD	CAT CANYON&SANTA MARIA BASIN	EL MOLINO	LINDSEY SLOUGH&RIO VISTA NW
PLANT NAME	UNION OIL BATTLES PLT.-M5805	PHILLIPS EL MOLINO-M3451	SERPA JUNCTION COMPRESSR STA
LOCATION	8 IN. LINE	8 IN. LINE	12 IN. LINE
OWNER	SOUTHERN CALIFORNIA GAS CO.	SOUTHERN CALIFORNIA GAS CO.	PACIFIC GAS & ELECTRIC CO.
SAMPLED	09/26/84	09/26/84	09/20/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	750	750	730
PRESSURE,PSIG	390	940	700
FLOW,MCFD	1500	1500	41900
COMPONENT, MOLE PCT			
METHANE	77.2	88.5	90.3
ETHANE	10.6	6.5	4.5
PROPANE	0.8	2.7	1.6
N-BUTANE	0.1	0.8	0.4
ISOBUTANE	0.0	0.6	0.3
N-PENTANE	0.1	0.2	TRACE
ISOPENTANE	TRACE	0.2	0.3
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	TRACE	0.1	0.2
NITROGEN	2.5	0.1	2.2
OXYGEN	0.2	TRACE	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	8.5	0.1	TRACE
HELIUM	TRACE	TRACE	0.01
HEATING VALUE*	1000	1152	1087
SPECIFIC GRAVITY	0.713	0.645	0.624

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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93

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 19 SAMPLE 17444	INDEX 20 SAMPLE 17446	INDEX 21 SAMPLE 17455
STATE	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY	SOLANO	SUTTER	VENTURA
FIELD	TREMONT,MILLAR,SAXON&BUNKER	NORTHERN CALIFORNIA GAS	MOBIL'S OFFSHORE FIELDS
PLANT NAME	MILLAR DEHYDRATOR STA.	YUBA CITY UNDERGROUND HOLDER	MOBIL RINCON-M3372
LOCATION	10 IN. LINE NO. 220	34 IN. INLET	10 IN. DISCH.
OWNER	PACIFIC GAS & ELECTRIC CO.	PACIFIC GAS & ELECTRIC CO.	SOUTHERN CALIFORNIA GAS CO.
SAMPLED	09/20/84	09/21/84	09/25/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	730	730	755
PRESSURE,PSIG	520	520	945
FLOW,MCFD	42000	40000	6700
COMPONENT, MOLE PCT			
METHANE	89.1	95.6	87.5
ETHANE	2.7	0.3	2.8
PROPANE	0.7	TRACE	3.9
N-BUTANE	0.1	0.0	1.2
ISOBUTANE	0.2	0.0	0.4
N-PENTANE	TRACE	0.0	0.1
ISOPENTANE	0.1	0.0	0.1
CYCLOPENTANE	0.1	0.0	TRACE
HEXANES PLUS	0.1	0.0	TRACE
NITROGEN	6.8	4.0	0.0
OXYGEN	0.0	0.0	0.0
ARGON	0.0	TRACE	0.0
HYDROGEN	TRACE	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.1	3.9
HELIUM	0.01	TRACE	TRACE
HEATING VALUE*	992	974	1100
SPECIFIC GRAVITY	0.613	0.573	0.673

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 22 SAMPLE 17456	INDEX 23 SAMPLE 17457	INDEX 24 SAMPLE 17947
STATE	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY	VENTURA	VENTURA	YOLO
FIELD	SCHOOL CANYON	TORREY CANYON	NORTHERN CALIFORNIA GAS
PLANT NAME	GETTY NO. 7-M3374	UNION OIL-M3723	HERSHEY JUNCTION
LOCATION	6 IN. DISCH.	10 IN. LINE	20 IN. INLET
OWNER	SOUTHERN CALIFORNIA GAS CO.	SOUTHERN CALIFORNIA GAS CO.	PACIFIC GAS & ELECTRIC CO.
SAMPLED	09/25/84	09/26/84	09/21/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	755	755	730
PRESSURE, PSIG	123	252	705
FLOW, MCFD	2500	8000	70000
COMPONENT, MOLE PCT			
METHANE	82.2	86.8	96.2
ETHANE	7.9	6.0	0.3
PROPANE	4.3	1.4	TRACE
N-BUTANE	TRACE	0.3	0.0
ISOBUTANE	TRACE	0.2	0.0
N-PENTANE	0.0	TRACE	0.0
ISOPENTANE	TRACE	0.0	0.0
CYCLOPENTANE	TRACE	TRACE	0.0
HEXANES PLUS	TRACE	TRACE	0.0
NITROGEN	3.3	0.6	3.3
OXYGEN	0.6	0.1	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	1.5	4.5	0.1
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1086	1040	980
SPECIFIC GRAVITY	0.667	0.652	0.570

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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95

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 25 SAMPLE 17369	INDEX 26 SAMPLE 17334	INDEX 27 SAMPLE 17370
STATE	MONTANA	MONTANA	MONTANA
COUNTY	BLAINE	BLAINE	CHOUTEAU
FIELD	BATTLE CREEK	TIGER RIDGE	BULLWACKER,LEROY,SAWTOOTH
PLANT NAME	BOXELDER COMPRESSOR STA.	BOX ELDER COMPRESSOR STA.	BIG SANDY COMPRESSOR STA.
LOCATION	6 IN. INLET	6 IN. INLET	10 IN. MAINLINE
OWNER	MONTANA POWER CO.	MONTANA POWER CO.	MONTANA POWER CO.
SAMPLED	08/01/84	06/22/84	08/01/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	395	395	500
PRESSURE,PSIG	410	370	450
FLOW,MCFD	625	1100	4000
COMPONENT, MOLE PCT			
METHANE	95.8	96.3	94.5
ETHANE	0.3	0.3	0.3
PROPANE	TRACE	TRACE	TRACE
N-BUTANE	0.0	0.0	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.0	0.0
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.0	0.0	0.0
HEXANES PLUS	0.0	0.0	0.0
NITROGEN	3.7	3.2	5.1
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	TRACE	0.0
HELIUM	0.08	0.08	0.07
HEATING VALUE*	976	981	963
SPECIFIC GRAVITY	0.570	0.568	0.577

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 28 SAMPLE 17368	INDEX 29 SAMPLE 17331	INDEX 30 SAMPLE 17330
STATE	MONTANA	MONTANA	MONTANA
COUNTY	DAWSON	DAWSON	FALLON
FIELD	BOWDOIN & FT. PECK	WILLISTON BASIN-MONT. N. DAK	LITTLE KNIFE&NW NORTH DAKOTA
PLANT NAME	MORGAN CREEK JCT.	MORGAN CREEK JCT. COMP. STA.	CABIN CREEK COMPRESSOR STA.
LOCATION	8 IN. BOWDOIN	12 IN. WILLISTON BASIN INLET	16 IN. INLET
OWNER	MONTANA-DAKOTA UTILITIES CO.	MONTANA-DAKOTA UTILITIES CO.	MONTANA-DAKOTA UTILITIES CO.
SAMPLED	08/02/84	06/21/84	06/20/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	395	395	395
PRESSURE, PSIG	430	180	450
FLOW, MCFD	18000	50000	75000
COMPONENT, MOLE PCT			
METHANE	92.0	74.9	72.1
ETHANE	0.2	15.6	13.5
PROPANE	TRACE	2.4	1.2
N-BUTANE	0.0	0.2	0.1
ISOBUTANE	0.0	0.1	0.1
N-PENTANE	0.0	0.0	0.1
ISOPENTANE	0.0	TRACE	0.0
CYCLOPENTANE	0.0	0.0	0.1
HEXANES PLUS	0.0	0.0	0.1
NITROGEN	7.5	6.0	11.3
OXYGEN	TRACE	0.0	1.1
ARGON	TRACE	0.1	0.1
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.7	0.3
HELIUM	0.07	0.03	0.04
HEATING VALUE*	936	1111	1044
SPECIFIC GRAVITY	0.586	0.693	0.720

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 31 SAMPLE 17338	INDEX 32 SAMPLE 17339	INDEX 33 SAMPLE 17337
STATE	MONTANA	MONTANA	MONTANA
COUNTY	GLACIER	GLACIER	TOOLE
FIELD	CUTBANK	S. ALBERTA & N. MONTANA	KEVIN-SUNBURST,LEROY&CANADA
PLANT NAME	COMPRESSOR STA. NO. 1	COMPRESSOR STA. NO. 1	CONRAD COMPRESSOR STA.
LOCATION	20 IN. INLET	16 IN. INLET	6 IN. INLET
OWNER	MONTANA POWER CO.	MONTANA POWER CO.	MONTANA POWER CO.
SAMPLED	06/25/84	06/25/84	06/25/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	500	500	500
PRESSURE,PSIG	200	481	280
FLOW,MCFD	14000	29000	300
COMPONENT, MOLE PCT			
METHANE	91.1	93.4	91.6
ETHANE	2.9	1.3	1.1
PROPANE	0.4	0.5	0.5
N-BUTANE	0.1	0.2	0.3
ISOBUTANE	0.0	0.1	0.1
N-PENTANE	TRACE	0.1	0.1
ISOPENTANE	0.0	TRACE	0.1
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	TRACE	0.1	0.1
NITROGEN	3.9	4.3	5.4
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	1.5	TRACE	0.5
HELIUM	0.13	0.12	0.18
HEATING VALUE*	989	1002	988
SPECIFIC GRAVITY	0.605	0.593	0.604

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 34 SAMPLE 17202	INDEX 35 SAMPLE 17276	INDEX 36 SAMPLE 17363
STATE	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY	SAN JUAN	SAN JUAN	SAN JUAN
FIELD	BEAUTIFUL MOUNTAIN	BEAUTIFUL MOUNTAIN	BEAUTIFUL MOUNTAIN
PLANT NAME	NAVAJO REFINED HELIUM PLT.	NAVAJO REFINED HELIUM PLT.	NAVAJO REFINED HELIUM PLT.
LOCATION	INLET	INLET	INLET GAS TO PLANT
OWNER	NAVAJO REFINED HELIUM CO.INC	NAVAJO REFINED HELIUM CO. INC	NAVAJO REFINED HELIUM CO.INC
SAMPLED	02/29/84	04/18/84	07/23/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	580	580	580
PRESSURE, PSIG	665	640	530
FLOW, MCFD	2500	3000	2600
COMPONENT, MOLE PCT			
METHANE	2.0	1.9	1.9
ETHANE	0.2	0.2	0.2
PROPANE	0.1	0.1	0.1
N-BUTANE	0.1	0.1	0.1
ISOBUTANE	0.1	TRACE	TRACE
N-PENTANE	0.0	0.1	0.1
ISOPENTANE	0.1	TRACE	TRACE
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	90.0	89.9	89.9
OXYGEN	0.0	TRACE	0.1
ARGON	0.8	0.8	0.9
HYDROGEN	TRACE	TRACE	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	0.5	0.6	0.6
HELIUM	5.94	6.13	6.04
HEATING VALUE*	43	38	38
SPECIFIC GRAVITY	0.922	0.920	0.922

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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99

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 37 SAMPLE 17367	INDEX 38 SAMPLE 17329	INDEX 39 SAMPLE 17328
STATE	NORTH DAKOTA	NORTH DAKOTA	SOUTH DAKOTA
COUNTY	MCKENZIE	STARK	BUTTE
FIELD	ALBERTA, CANADA	LITTLE KNIFE	RECLUSE & JOE CREEK
PLANT NAME	COMPRESSOR STA. NO. 4	BELFIELD COMPRESSOR STA.	BELLE FOURCHE COMPRESSOR STA
LOCATION	42 IN. INLET	8 IN. COMPOSITE	8 IN. INLET
OWNER	NORTHERN PLAINS NAT. GAS CO.	MONTANA-DAKOTA UTILITIES CO.	MONTANA-DAKOTA UTILITIES CO.
SAMPLED	08/01/84	06/20/84	06/19/84
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	395	395	395
PRESSURE, PSIG	800	530	680
FLOW, MCFD	290000	40000	2500
COMPONENT, MOLE PCT			
METHANE	55.7	79.4	82.1
ETHANE	2.3	16.3	13.0
PROPANE	0.1	1.8	2.7
N-BUTANE	0.0	0.2	0.3
ISOBUTANE	0.0	0.1	0.2
N-PENTANE	0.0	TRACE	TRACE
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.0	TRACE	TRACE
HEXANES PLUS	0.0	TRACE	TRACE
NITROGEN	1.9	1.7	1.7
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	TRACE
HYDROGEN SULFIDE	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.5	TRACE
HELIUM	0.05	0.03	0.02
HEATING VALUE*	1013	1153	1151
SPECIFIC GRAVITY	0.575	0.670	0.660

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 40 SAMPLE 17340	INDEX 41 SAMPLE 17341
STATE	WYOMING	WYOMING
COUNTY	BIG HORN	BIG HORN
FIELD	WORLAND & RIVERTON	WORLAND & RIVERTON
PLANT NAME	LOVELL COMPRESSOR STA.	LOVELL COMPRESSOR STA.
LOCATION	12 IN. INLET	2 IN. LINE AFTER SCRUBBER
OWNER	MONTANA-DAKOTA UTILITIES CO.	MONTANA-DAKOTA UTILITIES CO.
SAMPLED	06/27/84	06/27/84
FORMATION	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	520	520
PRESSURE,PSIG	477	477
FLOW,MCFD	18000	NOT GIVEN
COMPONENT, MOLE PCT		
METHANE	93.9	93.8
ETHANE	3.7	3.7
PROPANE	0.3	0.4
N-BUTANE	0.1	0.1
ISOBUTANE	TRACE	0.1
N-PENTANE	0.1	TRACE
ISOPENTANE	TRACE	TRACE
CYCLOPENTANE	TRACE	TRACE
HEXANES PLUS	TRACE	TRACE
NITROGEN	0.4	0.5
OXYGEN	0.0	0.0
ARGON	TRACE	TRACE
HYDROGEN	0.0	0.0
HYDROGEN SULFIDE	0.0	0.0
CARBON DIOXIDE	1.4	1.4
HELIUM	0.01	0.01
HEATING VALUE*	1033	1034
SPECIFIC GRAVITY	0.594	0.595

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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101

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